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ABSTRACT

Eleven papers delivered at the annual meeting of the International Federation of Library Associations and Institutions for the Division of Management and Technology are presented. Some were presented at a roundtable on audiovisual media, and others are from sessions on library buildings and equipment, information management, and statistics in library management. The following papers are included: (1) "Sound Archives in All India Radio" (H. M. Joshi); (2) "International Market for Spoken Books" (V. Arora, I. Bell, and M. Jenkins); (3) "Talking Books in Arabic, Kurdish, Turkish, and Urdu" (S. Tastesen); (4) "Library Building in the Tropics: The Saint Martin Experience' (B. Hodge); (5) "Model Architectural Design of a Library: Advantages and Defects of the Soviet Experience" (A. Zimonenko); (6) "Automated Strategies for Social Development" (K. S. Oswalt); (7) "Computer and Software for Information Services: An Overview of Mexican Progress" (J. Lau and M. Castro); (8) "Adapting Technologies for Library Processing Projects: Africa, Asia, and South America" (A. R. Pierce); (9) "Librarianship: Profession, Semi-Profession or Mere Occupation?: Surveying the Process of Change and Development in British Librarianship Today" (M. Freeman); (10) "Probability, Statistics and Library Management" (S. K. Basu); and (11) "Le Mesure de la satisfaction des usagers: Statistiques et enguetes aupres du public" (M.-D. Heusse) (French text). (SLD)

IFLA GENERAL CONFERENCE NEW DELHI 1992

Division : Management and Technology

Round Table on Audiovisual Media

Joint Meeting with:

WORKSHOP THEME (IF APPLICABLE):

U.S. DEPARTMENT OF EDUCATION
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Sound Archives in All India Radio

by

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New Delhi, India

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Sound Archives In All India Radio

ABSTRACT

The paper outlines the status of present sound Archives (Interim set-up) in All India Radio. Plans for the proposed permanent set-up have also been described. In the preservation of sound (aural) documents, unlike printed and written documents, the on-going technological developments play an important role. The factors, which should be taken into consideration while selecting the technology and medium for preservation of aural documents for posterity, have also been mentioned briefly.

Sound Archives in All India Radio

by

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SOUND ARCHIVES IN ALL INDIA RADIO

1. INTRODUCTION

All India Radio (AIR) is one of the earliest broadcasting Organizations in the world, having started broadcasting way back in 1936. This is the sole sound broadcasting organization in our country and acts as a prime carrier for the message of development along with information, news, views, mass education, promotion of national and international understanding. Having started with only one station, it has now grown into a major broadcasting organization, with 133 stations at present, increasing to 205 after the completion of all the 7th plan schemes. About 85.4% area of the country and 95.9% of the population has already been covered by AIR network.

India is a very vast country with unmatched diversity in the way of life of its people. It has a very rich and ancient cultural heritage and is endowed with great traditions in almost every walk of life. Classical and folk music has been an integral part of this heritage. Apart from this, India has produced eminent personalities in other fields who made great contributions towards enrichment of human life. AIR, as the sole sound broadcasting organization, had the unique privilege of acquiring a large number of sound recordings pertaining to the great Indian personalities of the

20th century as well as recordings of various phases of social transformation undergone by the country during the independence struggle and in the post independence era. It would not be out of place to add here that, before the development of audio-visual media / sound recording techniques, the link with the past would have been only through the printed and written medium, but now it is a great boon to the people of this generation and future generations that they can have these great people come alive right in their living rooms or at any other place, whenever desired, through the audio-visual media and provide them with feelings and sensation, unmatched through any other form of communication available to mankind so far.

2. BACKGROUND OF AIR ARCHIVES, ITS PRESENT COLLECTION AND SYSTEM OF STORAGE/RETRIEVAL

The Transcription and Programme Exchange Services(TPES), of which the sound archives presently forms part, began its activities in April,1954 with the record processing plant for making copies of specially produced light songs then known as 'Prasar geet'. The archives itself began with the transfer of about 7000 presto-discs to tapes in the early fifties. Now, recordings of all important programmes broadcast over AIR and which are worth preserving for posterity are acquired by the DTPES for preservation.

Presently, the archives is located temporarily in

Akashwani Bhavan,New Delhi, which is AIR's HeadQuarter. The sound recordings in the archives are preserved on 1/4" analogue audio magnetic tapes (1.5 mil mylar) conforming to internationally accepted standards and gramophone discs. It currently holds around 40,000 tapes which contain recordings of speeches and reminiscences of eminent leaders and personalities of the past and the present.

The country's musical heritage in AIR's collection are the recordings of memorable, soul-stirring music recitals by master musicians who are either no more or have passed their prime. Some of the artistes who are no more and whose recordings are available include Abdul Karim Khan, Allauddin Khan, Amir Khan, Bade Ghulam Ali Khan, Hirabai Barodekar, Begam Akhtar, Faiyaz Khan, Pannalal Ghose, Hafeez Ali Khan, Ariyakudi Ramanuja Iyengar, Madurai Mani Iyer, Dwaram Venkataswamy Naidu, Onkarnath Thakur, D.V.Paluskar, Rajab Ali Khan, Rassolan Bai, Sidheswari Devi, and Vilayat Hussain Khan. Keeping in view the public interest in the recordings of such master musicians, AIR has liberally permitted the gramophone companies to release as many of these recordings as possible on L.P. discs/cassettes. Some of the releases pertain to eminent artists like Faiyaz Khan, Bade Ghulam Ali Khan, Abdul Wahid Khan, Amir Khan, Hafiz Ali Khan, Allauddin Khan, Onkar Nath Thakur, D.V. Paluskar, Ariyakudi Ramanuj Iyengar, Ustad Rahimmudin Khan Dagar, Pannalal Ghose, G.N. Balasubramnian & Begum Akhrar, etc.

3(8)

The archival material is used by AIR for programme production, broadcasts, international programme exchange and for research and reference work. In addition, many AIR stations draw on the central archives as well as on the archives of their stations and broadcast regular programmes based on the recordings of old masters.

3. LIMITATION OF PRESENT SYSTEM AND MEDIA

In view of the non-availability of adequate space, technical and other facilities, the growth of the archives has been quite restricted. A number of aural documents have degraded in quality because of the limitations of the media of storage. At present, the AIR archives does not have any system which can bring improvement in the quality of old and degraded archival materials. Also, no system is available for transferring the archival material on to a new medium which is suitable for long-term preservation.

4. AIR PLANS FOR THE PROPOSED PERMANENT SETUP FOR ARCHIVES

In view of the above limitations, AIR has planned for a permanent sound archives setup. The site has been chosen in New Delhi, for various reasons. The proposed permanent building for AIR archives will provide quite extensive facilities for the storage of archival material, listening and dubbing facilities, tape and disc inspection facilities, facilities for improving

the quality (de-noising) of old sound recordings and their transfer on to digital medium (optical disc/digital audio tape), documentation library for old disc cartons, covers, clippings, photos and transcriptions of recordings, transcription booth, viewing and listening facilities for researchers and outsiders, broadcasting museum and other facilities.

The storage area will be absolutely dust free & fully air conditioned. The load on the air conditioning plants will be reduced by providing heat treatment to the roof. In addition, the building will be provided with adequate water proofing and antitermite treatment. It will have appropriate fire prevention, detection & control system. Special care will be taken in laying the electrical cables so as to avoid strong magnetic field in the vicinity of the storage areas. Adequate precautions will be taken to guard the precious tapes from getting damaged due to lightening surges by carefully locating / running lightening conductor system.

The existing archives of All India Radio, located temporarily in Akashvani Bhavan,is being upgraded shortly with modern facilities for undertaking the work of de-noising of old and degraded sound recordings and transfer of audio material on to digital medium (tape/optical disc). This project of "upgradation of AIR archives" is being implemented by AIR with UNDP assistance. This modern state-of-the-art facility will

enable us to 'clean' the old & degraded recordings, to the extent possible, by using computer-based digital audio signal processing techniques & then transfer these recordings, in digital format onto magnetic tapes or optical discs for long-term preservation.

5. POTENTIAL (OF ARCHIVAL MATERIAL) AVAILABLE IN THE COUNTRY AND EFFORTS NEEDED TO TAP IT

Special efforts are now being made to acquire for the archives, voice-recordings of eminent Indians and music recitals by prominent artists when they are in the top of their forms. Recordings of interviews/reminiscences of eminent persons, National Leaders, Freedom Fighters are also recorded and preserved in AIR Archives.

Apart from AIR, there are many music enthusiasts and organisations who, in their own way, have collected a large number of music recordings and who even possess rare musical instruments. No realistic estimate of this large private collection and its value is available. However, in due course of time, with more space and facilities, we would like to acquire such rare and valuable sound recordings as well as rare musical instruments from the private collectors and preserve them in the AIR archives for posterity. As mentioned earlier, folk music is an integral part of our ancient cultural heritage. Though our country still has a great potential for folk music, the tribal areas which are rich in folk music

and which are its important source, are slowly losing touch with their traditional culture. It will be in the fitness of things if more efforts could be made by individuals / voluntary organisations and others interested, in addition to the efforts by AIR, to search, identify, collect, record / re-record this precious treasure of folk music and bring it to AIR Archives for proper preservation centrally. This could then be used in current programme production and programme exchange in AIR network and by bonafide users/ organisations inside and outside the country. In fact, tremendous efforts will be needed in this direction. This would enormously enrich the sound archival collection for posterity which would be preserved.

6. **CONCLUSION**

The present AIR archives is relatively a small setup. However, the facilities under the proposed permanent setup would provide considerable scope for its future growth and also equip it to discharge its responsibility fully and effectively as can be expected of a modern sound archives. We are fully aware of the tremendous challenge that lies before us, particularly in view of the importance of the precious archival treasure to the country and in view of the fact that if this material is lost damaged or destroyed on account of improper preservation, handling and use, and lack of safety, if cannot be regenerated and will be lost for ever. Therefore,

preserving sound archival material for posterity entails very high degree of responsibility. Not only this, it is quite a difficult and costly affair too. This is more so when the technology related to the sound recording techniques and recording/storage medium is changing fast.

New techniques are being developed for recording of sound, its processing and storage on long lasting medium which require much less stringent environmental conditions and also pose relatively less problems in handling and use.Further ,the Conventional medium and professional analogue audio recording/playback equipment are likely to fade away in another couple of decades or so. In view of this,selection of a new medium and technology for long- term digital storage of archival audio material is inescapable. While selecting, however, one has to carefully consider the pros and cons of each and adopt such technology and medium which are proven, durable, compatible and which can provide in-house record and reproduce capability and be able to retain the audio information safely and economically in original form for long time. with the assurance of efficient and accurate retrieval in future. Keeping the cost & efforts required in audio signal refurbishing & its storage, the change to the new format has to be gradual for any developing country With these considerations we are going ahead and would like to interact with other organisations who are interested in the preservation of aural documents, especially for posterity.

IFLA GENERAL CONFERENCE NEW DELHI 1992

Division: Management and technology

Section/RT: RT Audiovisual Media

Joint Meeting with: Section on Library Services to Multicultural Populations

WORKSHOP THEME (IF APPLICABLE): Provision of Audiovisual Media to Immigrants

98 AVM-2 / MCULTP-5 (WS)-E

International Market for Spoken Books

by

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INTERNATIONAL MARKET FOR SPOKEN BOOKS

INTRODUCTION

"In today's world, libraries are the repositories of knowledge, the centres of information, and the preservers of culture and civilization. Yet for those persons unable to read print, the resources of the majority of libraries are not readily available."[4] There is no doubt that our current education system is print-oriented. Libraries use the size of their bookstock as one of their indicators of excellence, and the range and number of periodical subscriptions is viewed as a measure of strength of holdings. While these may be valid gauges for the print literate population, they are of little value to those who cannot communicate through print.

"In most western societies, such as the UK, Canada, the USA and Australia, it is estimated that something like 3.5% of the population have vision problems which so significantly inhibit visual reading as to consider it to be an impractical medium for communication".[9]

Public libraries are accepting responsibility for serving this segment of the population, whose needs have been highlighted in this Decade of the Disabled. Many libraries are now purchasing

restricted talking-books specifically for the disabled, or commercially-available books-on-cassette.

"The confusion between restricted and unrestricted spoken-word cassettes has not diminished. Until recently, books-on-cassette were produced mainly as a service for the blind and other print-disabled persons. Such "talking books" often were produced on special cassettes that could not be used on conventional playback machines. In the last few years, however, the commercial production of unrestricted talking books, or "books-on-cassette" for general use, has increased substantially. In some countries, the distinction between restricted and unrestricted books-on-cassette is clear-cut, whereas in other countries, it is rather ambiguous."[2]

Some libraries buy commercial spoken books, some restricted talking books for use exclusively by the disabled, and others both, though it may sometimes create difficulties explaining to users why they may have access to one collection of spoken-word cassettes and not the other. For the purposes of this paper we shall refer to books-on-cassette produced for print-handicapped individuals as **restricted talking books.** Other books on cassette shall be referred to as **commercial spoken books.**

Over the last few years, spoken books have become an established

part of the book trade. A recent article in Publishers Weekly stated that "there is general consensus among librarians and the publishing industry that spoken-word audio has been accepted as a viable and here-to-stay segment of the publishing industry. Having survived the shakeout of 1987 and building on the momentum of 1988, publishers and booksellers alike seem to have settled into an increasingly mature market, complete with more sophisticated marketing and merchandising programs, greater consumer awareness, new avenues of distribution and increased sales."[13]

Furthermore, a poll conducted by Library Journal of 372 libraries revealed that over half of the responding libraries had increased their total spoken-book budgets for 1991, despite financial problems. "This is rather surprising, since during times of fiscal restraint and rampant funding cuts like the present - the usual response is to fall back and protect what are traditionally considered core services. Is audio now so important that, like books, it should be considered a core service? Many librarians seem to think so"[1]

A word of caution. In purchasing spoken books libraries should be aware that the quality of cassettes varies, and libraries may want to verify or check the quality of sound and narration before adding titles to their collection.

CANADA

Commercial Spoken Books

Canada, in 1992, is made up of some 27 million people from more than 100 different ethnic groups which range alphabetically from A (Aboriginal, British, Chinese, East Indian for example) to Z (Zambian). Virtually every race, religion and culture in the world is represented in Canada. In the worldwide scheme of things, our country is so unique that noted British economist Barbara Ward called Canada "the world's first international nation."

Canada has two founding cultures, English and French, and their languages are the official languages. For over 20 years the government of Canada has also recognized the multicultural nature of its population and has attempted to provide access to books in heritage languages through the National Library of Canada's Multilingual Biblioservice. Several years ago this agency began to develop collections of spoken books to satisfy a rising demand from older Canadians whose first language was other than English or French. In addition to providing access to the collection, the Multilingual Biblioservice produces a regular list, Books-On-Cassette in Languages Other Than English: A Guide to Suppliers, which provides addresses for standard 2-track format cassettes with unrestricted access in thirty-six heritage languages and French, but not English. The list identifies dealers in countries such as: India, Norway, Finland, Denmark, Pakistan, Germany, Netherlands,

England, United States, Canada and others.

This list is intended to serve as a buying guide for public libraries wishing to develop spoken book collections in other languages.

There are some dealers such as Choix Jeunesse and ADP, who carry children's book and audio cassette packages in French. Most of these titles are originally published and produced in France. Editions du Levain (Canada) Inc. distributes an adult fiction series, the titles of which are mostly classics, also originally published in France. They produce two books per month of commercial unabridged spoken books, often read by the author.

In Canada, some dealers specialize in specific languages, and others cover a wide variety of languages. Multi-Cultural Audio Video Systems, a Toronto supplier that handles many languages, has recently published a 175-page annotated catalogue, listing spoken books, videos, and CD's in more than 20 languages. Many of the titles are meant to aid language learning or language retention.

Local dealers who specialize in spoken books in specific languages are often book dealers who are branching out into spoken books. In the various Indic languages, spoken books can be purchased from Toronto dealers specializing in East Indian books,

if not purchased directly from producers in England or India.

Overall there are few commercial spoken books being produced in Canada in English, French, or any other language. However, there is general agreement that the medium is popular and demand for such materials will certainly increase.

Restricted Talking Books

There are three major producers of restricted-access English language unabridged talking books in Canada: Canadian National Institute for the Blind, British Columbia Library Services Branch, and University of British Columbia Crane Library. The latter produces mostly academic materials for university students but does have some items of general interest. The former produce general interest, popular, and recreational reading materials for persons with disabilities.

L'institut Nazareth Louis Braille (INLB), formerly the main producer of French-language talking books for persons with disabilities, gave its French collection of talking books to the Canadian National Institute for the Blind (CNIB), Quebec Division, two years ago. This Division of CNIB is now the major producer of talking books in the French language for North America.

Compared to similar institutions and services in the world,

the CNIB is unique in providing comprehensive information access nationally which includes not only library services but also the transcription of material into the user's choice of format. It ranks among the largest provider of information services to the blind and visually-impaired community both nationally and internationally.

Within the Canadian network of publicly funded, commercial or not-for-profit organizations, the CNIB:

- produces the largest number of finished recording hours in English;
- produces all the recreational material for French audio production;
- is among the leading agencies in its use of technology, English braille codes and audio formats in Canada and internationally;
- provides expanded access to international sources such as Recordings For the Blind and the Library of Congress.

UNITED STATES

Commercial Spoken Books

English

There is widespread agreement that spoken books are a very popular medium and that the demand for them will only increase.

Recently Bowker published the 7th edition of its equivalent to books in print for audio materials. The name changed with the 1992 edition to Words on Cassette as a result of the amalgamation of Words on Tape and On Cassette. It contains 49,000 titles on spoken-word cassettes from over 1,140 producers. The majority of the titles listed are in English. However, titles in French, German, Italian and Spanish may also be found in this useful tool.

The major U.S. English-language producers of commercial spoken books include: Random Audio, Harper Audio, Simon and Schuster Audio Division, Caedmon Audio, Recorded Books, Dove Audio, Bantam Audio, Audio Renaissance, and Books on Tape. Many of these are now doing simultaneous publication of hard-cover book and spoken book, particularly of titles they expect may become best sellers.

An increasing number of bookstores are carrying spoken books as part of their standard items. Also flourishing are retail stores such as Words in Motion in Chicago which specializes exclusively in the spoken-book format.

It is becoming easier for most public libraries to acquire titles through better bibliographic control and through the use of dealers such as Professional Media Services and Baker and Taylor which publishes a special section of its catalog called Sound Buys. Another popular and profitable trend is the increased demand for

backlist titles which industry spokesmen believe is "further proof of the solidification" of the spoken-book market.

Although review literature which is accompanied by adequate purchasing information is still relatively scarce, dealers are issuing regular catalogues of readily available books on cassette. Library Journal includes a regular column of reviews of English-language spoken-books.

Much of the literature speculates about expanding markets for unabridged titles for libraries and abridged versions for individuals, mainly commuters, who listen to the less expensive abridged books while they travel to and from work.

Restricted Talking Books

The U.S. Library of Congress, National Library Service (NLS) for the Blind and Physically Handicapped is the main producer of restricted-access English-language talking books in the United States. It also has a foreign-language collection and, in 1985, they were producing about 100 foreign language titles per year primarily Spanish titles as well as Italian, French, German and Portuguese. These are full-text readings of previously-published works, including fiction, non-fiction, translations and works published originally in the foreign language. Copyright permission

is often difficult to obtain and materials are produced on cassettes requiring special playback machines.

National Library Service also purchases materials in Spanish, German, French, Italian, Portuguese, Polish, Russian, Chinese, Hungarian, Yiddish, and Greek. It has some titles in Sanskrit, Turkish, Tagalog, Persian, Arabic, and Ukrainian. NLS also produced a Guide to Spoken Word Recordings, which lists many commercial publishers of foreign-language materials on tape. NLS currently has talking book purchase agreements with libraries in Australia, Canada, Great Britain, Hong Kong, Jamaica, Netherlands, Peru and South Africa. Talking books have been purchased from special libraries in Poland and Yugoslavia, and NLS is now making arrangements to purchase from Russia. These talking books are placed in a special Foreign Language collection, which now stands at over 3,000 titles. NLS expects that the number of languages and the number of titles produced and acquired will continue to increase significantly in the coming years.

It is also interesting to mention that in the United States the largest producer of Ukrainian talking books in the world - the Cleveland Society for the Blind, which now lists over 900 Ukrainian titles, and distributes them world-wide for the use of print-disabled persons.

LANGUAGE INSTRUCTION

Also very popular world-wide are language-instruction cassettes. Factors such as increased tourism, new business opportunities, and the continuing influx of immigrants have increased the interest in learning languages. Spoken word on cassette has long been a popular means of learning another language so the expanded interest in languages has naturally led to greater production of materials.

Words on Cassette provides 20 pages of listings of language instruction kits in 34 languages. There are approximately 3 pages each of English as a second language, French, German, and Spanish. The volume of materials available leaves no doubt about the large and expanding market for such material.

OTHER COUNTRIES

Commercial Spoken Books

Commercially available spoken books can usually be obtained from dealers and producers in the country of origin, and sometimes can be obtained in North America locally.

In some countries, such as Japan, the producers and even dealers prefer not to sell directly abroad, but encourage customers to purchase from local representatives or distributors.

The supply of spoken books varies considerably from language to language, and country to country. Few Indic language spoken books are available commercially, but many restricted talking books are produced. German titles however, are plentiful, with such speciality producers as Schumm Schprechende Bücher and Ernst Klett Verlag in Germany selling their spoken books directly or through book suppliers. The larger Danish bookdealers, such as Munksgaard, will supply not only spoken books produced by Danish producers Gyldendal and Thomas Blom, but also cassettes produced in other languages by other Scandinavian countries. Spoken books can also be purchased from the library service bureaus of the north European countries, such as A/L Biblioteksentralen in Oslo, and Bibliotekstjunst in Lund, Sweden.

The recorded length of titles also varies. Some countries produce mostly abridged titles, and other countries, such as Finland, produce full-length works that go up to 16 or more cassettes per title. Needless to say, the cost of such multi-cassette titles can be prohibitive.

In certain languages, such as Chinese and Italian, production of spoken books is mostly for children rather than for the adult listener. The Italian children's cassettes usually have accompanying booklets.

In some languages, more spoken books are produced in the countries to which workers have emigrated, than in their native countries. So, Turkish spoken books are produced in Germany and Holland, Berber and Arabic spoken books also in Holland, and Kurdish spoken books in Denmark. In the United States, Russian-language works are read and produced by an emigre Russian actress. It would also be worth mentioning a very active producer and distributor of other-language spoken books, Soundbooks in Australia. Soundbooks imports and sometimes produces cassettes in at least ten languages, including Korean, Thai, and Croatian.

Restricted Talking Books

Throughout the world most countries produce braille or talking books for their own print-handicapped readers and supplement local production by acquiring materials from libraries and organizations in other countries. Sharing resources is an important way in which a wider range of material is being made available to persons who do not ordinarily have access to the printed word. Since any given library cannot produce or purchase everything it requires, it is desirable that the collections of all libraries be open to eligible persons everywhere in order to expand the universe of available reading. One notable case in point is the relationship between Canada and the United States.

"Canadians purchase many special-media books produced in the

United States for a large percentage of their reading materials. Americans also have access to Canadian books, such as French language talking books that are not produced in the United States. The sharing of such materials normally takes the form of acquiring specific titles through purchase, loan, exchange or gift arrangements".[4] Determining which books are already available is now much easier, thanks to the computer databases developed by several national libraries. National Union Catalogue of Special Format Materials such as those of Australia, Canada and the United States aim to provide comprehensive, accurate and timely information about what materials are available for interlending.

In some countries questions of copyright have an important bearing on the production of talking books. For example, in the German-speaking countries of Europe, there are national regulations permitting special libraries to produce talking books of any published titles without getting clearance from the author. In Sweden, France, and Spain special laws have been passed to reproduce copyrighted works without requesting an individual's permission. Similar legislation is also under consideration in Canada.

In terms of quantity, quality and implementation of the latest technology in special-materials production, the United States holds

a leading position in the world today. Facilities in Canada, Australia, New Zealand, Europe, South Africa and Japan also produce a great variety of recorded and braille materials thus implementing to varying degrees the latest production technologies.

"In less affluent areas of the world, there is little or no production of special-format reading materials. Although there is a talking book production facility in Uruguay, most countries import recordings from Spain. An active braille and talking book facility in Brazil produces materials in Portuguese. However, other Latin American countries have no capabilities in this regard.

A survey of other regions of the world reveals production facilities in Israel, which produce materials in Hebrew and in Arabic. Some special-format production occurs in Egypt and Saudi Arabia, but most areas of Africa have no production facilities. In Asia, the Hong Kong Society for the Blind produces recorded and braille materials in Chinese and English, and some braille production is undertaken in India, Pakistan, Indonesia, Malaysia, Singapore, and China. Other areas of Asia have almost no services. Generally, in underdeveloped areas, in which there are critical problems meeting the basic socioeconomic needs of handicapped persons, there is no infrastructure conducive to the production of reading materials for handicapped persons at any level"[4]

CONCLUSION

The future of this market may extend into CDs and computer software because of the superior technology available. However, there are vastly differing opinions about this. Some feel that the cost of production of CDs is still too expensive to make them as viable as a cassette. It remains to be seen what will happen with these formats.

Comments from librarians and publishers from Western countries suggest a bright and practical future for spoken books and talking books in library collections. This general optimism extends to more production and better bibliographic control of acquisition, organization, and distribution of the materials.

BIBLIOGRAPHY

1. Annichiarico, Mark. "Spoken Word Audio". Library Journal, Vol. 16, May 15, 1991. pp. 36-39.

2. Bell, Irena. Books-On-Cassette in Languages Other Than English: A Guide to Suppliers. 4th Edition. National Library of Canada, Multilingual Biblioservice, 1992.

3. Burns, Ann. "Library Use of Books on Audiocassettes". Library Journal, Vol. 110, November 15, 1985. pp. 38-39.

4. Byrne, William C and Others. "Resources and Information: an International Exchange." Journal of Visual Impaired and Blindness. June, 1990. pp. 327-331.

5. Fakih, Kimberly Olson. "Books Unbound: Abridged vs. unabridged Audiocassettes." Library Journal, November 15, 1989. pp. 38-42.

6. Garofalo, Denise A. "Breaking the Language Barrier with Audio". Library Journal, January, 1992. pp. 65-68.

7. Herndon, James and Others. The National Library Service for the Blind and Physically Handicapped, Library of Congress, United States of America and the Sharing of Special-media Materials among Libraries, Sale, Loan, exchange and gift. Library of Congress, The author, 1991. 8p.

8. Herndon, James R. Foreign Language Program: National Library Service for the Blind and Physically Handicapped. Library of Congress. Chicago, IFLA General Conference, 1985.

9. Junor, Lloyd. "Time Compressed Speech: A Resource Alternative for Nonvisual Reading". Aplis, 5(1), March, 1992.

10. "Library Services for People with Disabilities". Linkup. Issue no. 74 Supplement. National Library of Australia, June 1992. This issue is devoted to Audio and Large Print Books in Languages Other than English.

11. Schnol, Janet. "The Changing World of Foreign-Language Audio." Publisher Weekly, March 2, 1992. P. 26-27.

12. Sjostedt, Lise. "Talking Book Service: Approaching Complete Integration". Scandinavian Public Library Quarterly. 1/90. pp. 19-21.

13. Tangorra, Joanne. "Getting the Word Out". Publishers Weekly, January 5, 1990. pp. 52-53.

14. Words On Cassette, 1992: Combining Meckler's Words on Tape with Bowker's On Cassette. Bowker, 1992.

15. Zielinska, Marie F. and Jaswinder Gundara. The Challenge of Audio-Visual Library Services to Canada's Culturally Diverse Society. unpublished, June, 1989. 17 p.

16. Herbert, Francoise and Others. Multilingual Talking Books in Ontario Public Libraries : a Directory of Sources. Toronto : Ministry of Culture and Communications, 1988. 122p.

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IFLA GENERAL CONFERENCE NEW DELHI 1992

Division: Management and Technology

~~Section~~/RT: RT on Audiovisual Media

126-AVM-3/MCULTP-6 (WS)-E

Joint Meeting with: Section on Library Services to Multicultural Populations

WORKSHOP THEME (~~NOT APPLICABLE~~): Provision of Audiovisual Media to Immigrants

Talking books in Arabic, Kurdish, Turkish and Urdu.

A production of Copenhagen Public Libraries
Denmark

by Susy Tastesen

Copenhagen Public Libraries

Denmark

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Talking books in Arabic, Kurdish, Turkish, and Urdu.
A production of Copenhagen Public Libraries.
Denmark..

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Resumé

Talking books in Arabic, Kurdish, Turkish, and Urdu.
A production of Copenhagen Public Libraries, Denmark.
By Susy Tastesen

In 1987-88 the branch library "Vesterbro" and The Department for Production of Local Newspapers on Tape, both Copenhagen Public Libraries, carried out a project to improve their service for the immigrants living in the district.
This speech describes how to make talking books for immigrants: purpose, how to choose books and speakers, and how to make the tapes ready for library use and for sale.

Talking books in Arabic, Kurdish, Turkish, and Urdu
A production of Copenhagen Public Libraries, Denmark

Speech given at the IFLA conference, New Delhi, 1992 by Susy Tastesen

Graduated from the Royal School
of Librarianship, Copenhagen,
Denmark 1976.
Since 1979 employed by Copenhagen
Public Libraries; the first 4 years
in the department serving hospitals
and nursing homes, and from 1983
as head of The Department for
Production of Local Newspapers
on Tape.

Introduction

I want to talk about a project, which my department and the branch library "Vesterbro" in Copenhagen carried out in 1987 and 1988. I will only describe our part of the project, which was a production of talking books in different immigrant languages.
The library Vesterbro tried to improve their service for immigrants living in the district. As my Department for Production of Local Newspapers on Tape is located in the same building as the library, it was natural to make use of the department's facilities to produce talking books and other materials in immigrant languages.
For this part of the project we received a special state grant.

What initiated the project?

Vesterbro library is one of 20 branch libraries in Copenhagen. It serves a poor, inner-city area in which about 34.000 people live, and almost 20% of these are immigrants from Turkey, Pakistan, Morocco and Yugoslavia.

Even those immigrants who have obtained Danish citizenship usually have a very poor grasp of the Danish language, because the native language is always spoken in their homes.
When their children start school at the age of six or seven they often know only a few Danish words. In the seven primary schools in the district, 35% of the pupils come from immigrant families, and in one school there are no Danish children in the first and second grade.

Denmark has a very strong tradition of using public libraries. Nationwide more than 60% of the population use the public libraries regularly. So the library staff at the Vesterbro library felt, that they had to make a special effort to provide materials for these nearly 7.000 persons in the district who couldn't speak or read Danish.

The Department for Production of Local Newspapers on Tape has existed since 1983. We make 8 different local newspapers a week, for 8 different areas of Copenhagen. Any person in Copenhagen with reading disabilities can subscribe free of charge, and we have nearly one thousand subscribers.
When the department was started, it received a special state grant, which meant that we could purchase the best equipment - we chose to buy the same tape recorders and cassette copying machines as those used by The Danish National Library for the Blind.
The department has two sound studios and a capacity to copy 120 cassettes of 90 minutes each in one hour.

The purpose of our project

When we started the project, talking books were chosen for a number of reasons:

- to provide materials for older and younger children who had a need of retaining their family's cultural background while learning to function in the Danish society;
- to provide 'a good book' for adults - often illiterate women;
- to give information about the Danish society by producing versions on tape of various pamphlets concerning the individual citizen's rights and obligations;

- to enable us to produce other kinds of tapes for immigrants: for example music by local immigrant musicians, children's songs, or stories and fairy tales told by immigrants;
- to enable us to co-operate with the local radio station regarding copying and lending programmes in immigrant languages.

If the immigrant children don't speak Danish when they start at school, they are given supplementary lessons in Danish. Likewise they are offered lessons in their native language from the fourth grade.
In Denmark it is considered important, that the immigrant children have knowledge of their original language and cultural background, i.e. they know their roots. They are therefore given lessons in their native language to insure that they at least will be able to master one of the languages.
In the project we wanted to support these intentions by offering the immigrants books, newspapers, magazines, and talking books in their own languages.
In the children's case this was done to help them practice reading and writing in their native language, and talking books would give them an opportunity of listening to the standard language pronunciation.

How did we choose the books?

When we started our production of talking books, The Danish Central Library for Immigrant Literature helped us to select suitable books.
At first, books were selected according to the countries' finest authors and the best of 'good literature'. We all agreed on this selection criterion, also our immigrant advisors.
However, the users' verdict was clear. They prefered easy, popular books with a good story, not too philosophical, and not too long.
This made us realize, that the people we hoped to reach had received much less formal education than our speakers and advisors. They had never learned to read or write, or at least never learned it very well. Regarding the children they had not learned it yet.
This means, that there is an important difference between the materials produced for immigrants and the talking books

and newspapers we usually produce in Danish. Danish talking books are especially directed to the blind, who represent a cross section of the Danish population regarding education. Therefore, for the blind you have to make as broad a selection as possible of everything in print, but for the immigrants it has been necessary to make a more popular selection.
Obviously, our immigrant advisors and speakers too, are better educated than most of the immigrant library users. Consequently shorter, easier books are now chosen for recording.

This situation will proberly soon be altered, as the second and third generation of immigrants are growing up. They will have received the same schooling as the Danish children and therefore be more easily assimilated to the Danish society.

How did we choose the speakers?

The recordings were done by immigrants who spoke either Danish or English apart from their native language.
Some of them we knew because they worked in the Copenhagen Public Libraries while studying, others were relatives to the employés, some were recommended by immigrant teachers, and some were recommended by The Danish Central Library for Immigrant Literature.
Their voices, accents and dialects were approved by 'mother-tongue teachers' from our local schools. Some complaints were received from users regarding the chosen dialects, but as far as possible people were employed who spoke the 'correct' language. Our users came from very large countries with several languages and dialects, which could all be 'correct'. We therefore decided to let the mother-tongue teachers advise us - and to trust them!

How we trained our speakers

We arranged a special introduction for the immigrant speakers by one of our professional Danish speakers.
He demonstrated breathing technique and the correct use of a microphone. Furthermore we talked about dramatic reading as opposed to neutral reading practices, and the difference between reading for adults and for children.

Normally our working procedure is as follows:

The text is read aloud inside the studio, and outside a technician is controlling the tape recorder. She also has a copy of the text and by this kind of simultanious 'proof-reading' all errors can be corrected at once.
But during the recording of the talking books in immigrant languages, we had to depend on the speakers' ability to correct their own mistakes.
We often sent tapes to the mother-tongue teachers to make sure, that the books were recorded correctly.

Most of these immigrant speakers showed great interest in the project and proved very flexible. Apart from the actual pp
recording of the text they helped with translations, transcriptions, writing labels and notes in their own languages, making posters, and also suggested further books suitable for the project.

How to make the c ssettes ready for library use

It was a major problem to make the tapes ready for library use. It took us much longer than we expected.

When the recording of a book was finished, the cassette tapes were copied from the master reel tape.
Labels for the tapes were printed by computer or they were typewritten and then photocopied.
Any text in Urdu or Arabic was written by hand.
Each front and the paper strip for the spine of the plastic jacket had to be cut by hand.
On the back of the plastic jacket we had notes of content in either Danish or English and in immigrant languages.

We have now, however, passed on to more efficient working methods. The printing office of the Copenhagen Public Library System now prints our covers and we do not any longer cut paper strips by hand one at a time, but we machine-cut 100 at a time.

Books combined with tape

Several books were produced aiming at language/reading training for Arabic speaking children. An Arabic teacher asked us to try to combine the book with the tape. The books were recorded in the same way as all the other

talking books, without attempting to read slower than normal. In the library the users take out a multi-media pack containing both the printed book and the talking book. These are very popular, and we ought to make some in the other immigrant languages.

Other tape materials in immigrant languages

On the local level, i.e. Vesterbro, we recorded introductions to one of the schools in the district and to a youth centre. Both the pamphlet and the tape-version in each case were given to immigrant parents.

An Association of Kindergardens had printed booklets on children's diseases in 3 immigrant languages. We recorded all of them, and afterwards they could be borrowed from the library.

Co-operation with the local radio in the area

At the very start of the project our local radio station was contacted, and we produced a radio spot about the new library service. Later we produced radio spots in immigrant languages reminding parents that their children should be enrolled in school.

Co-operation with the School System

Every year the Copenhagen School System is paying us to produce a tape-version of a booklet to be given to parents of all 16 year-old school children, outlining their children's options whether they choose to leave school or to pursue an academic career. The Danish text is recorded on side one of the cassette and on side two is the same text, slightly abridged, in immigrant languages. Six versions are made, our usual four - Arabic, Kurdish, Turkish and Urdu - and Serbo-croat and Albanian.

Present situation

At this moment - four years after the project ended - our talking books are sent to all libraries in Copenhagen. They are placed on open shelves, and can be borrowed free of

charge. They are part of the normal national interlending service.
We now have a collection of 600 reel master tapes and we have lots of cassettes kept in drawers in a storage unit waiting to be put into plastic jackets. If a single cassette is missing or damaged we can easily replace it, and if the stock is empty, we can very quickly make more copies of any book.

During the last couple of years we have offered our talking books to other libraries in Denmark as well as worldwide at a very favourable price, which is caused by the state grant mentioned above.
Many libraries have been eager to buy our talking books, and we are now about to continue the production, and increase the number of titles - at present there is a great demand of talking books in Arabic.
Also other languages, like Farsi, will be recorded.

It is our hope that other major libraries will do the same, so that the production of talking books will become larger, and that gradually more languages will be included.

Description of the project:

Indvandrerprojekt på Vesterbro bibliotek 1987-88
Lydmedieproduktion og -formidling for indvandrere.
Rapport 1989.
Af Kirsten Reinhold Pedersen og Susy Tastesen, Københavns kommunes biblioteker.

Report on the project. Danish text only.

Standard text at start and end of tapes at recording of talking books

This is a novel/short story/fairy tale/collection of stories by.....
(name of writer)

called.....
(title)

from.....
(year of publication)

Published by.....
(name and place of origin of publishing firm)

Recorded on tape in.....by.....
(year) (name of the speaker)

The talking book is published by the Copenhagen Public Libraries.

This was all on track 1. Please stop the tape recorder and turn over the tape at once.

.....1. cassette, track 2.
(writer, title)

chapter.....continued, page.....

This was all on track 2. The recording continues on cassette no..... Please wind forward until the tape stops.

This was the end of.....
(writer,title)

Please wind until the tape stops (if it is track 2)
or
Please rewind until the tape stops (if it is track 1)

Annex 2

Talking books in immigrant languages produced by The Department for Production of Local Newspapers on Tape, Copenhagen Public Libraries

Language	Adults	Children
Arabic	11	25
Kurdish	3	11
Turkish	16	19
Urdu	7	17
Total	37	72

Talking books for children according to age-group:

	0-5 years	6-10 years	11+
Arabic	11	11	3
Kurdish	6	5	0
Turkish	1	16	2
Urdu	9	6	2

IFLA GENERAL CONFERENCE NEW DELHI 1992

Division: MANAGEMENT AND TECHNOLOGY

Section/RT: LIBRARY BUILDINGS AND EQUIPMENT

Joint Meeting with:

WORKSHOP THEME (IF APPLICABLE):

114-BUILD-1-E

LIBRARY BUILDING IN THE TROPICS

THE SINT MARTIN EXPERIENCE

BY

BLANCA HODGE

LIBRARIAN, PHILIPSBURG JUBILEE LIBRARY

For internal use only:

Meeting No: 116

SI: ~~yes~~/no

Estimated number of participants in the meeting:

ABSTRACT

After describing the geographical situation of Sint Martin and giving a short history of its library, the paper gives an overview of the planning and building process that resulted in the public library of Sint Martin.

Both in design, structure and colour the building has been made suitable for the tropical environment. In designing the building the architect ensured that maintenance cost would be low and the cost of energy as low as possible by utilizing the prevailing wind flow and by using very high ceilings.

The building is also economical in staffing.

Geographical situation

Sint Martin (St.Maarten, St.Martin) is an island of eighty-six square kilometres. It is situated in the Caribbean sea (63 degrees West and 18 degrees North) and has an average temperature of 27 centigrades with an absolute maximum of 35 centigrades and an absolute minimum of 17 centigrades.

The island has an average windspeed of 5,4 m/s, which blows 80% of the time out of an easterly direction.

The island is divided in a French (North) and Dutch (South) side.

The French side is considered a part of Guadeloupe - a French Departement - and the Dutch side forms together with five other islands (Bonaire, Curacao, Saba and St.Eustatius) the Netherlands Antilles, an "autonomous" partner in the Kingdom of the Netherlands. The island doesn't have boundaries between the two sides, but each side has its own government, schools and library.

There are three official languages on Sint Martin: Dutch, French and English. On the Dutch side

Sint Martin is situated in the Atlantic hurricane zone. One storm or hurricane per year passes the island within a radius of 200 km, whereas on an average once very 4.5 years the island is hit by a hurricane (windforce ca 125 m/hr - 180 m/hr)

Historical Background

The Philipsburg Jubilee library - a public library - was founded in 1923. The library had a history of moving from place to place until in 1968 "temporary housing" was found.

From 1923 to early 1968 the library was "manned" by In 1968 a qualified librarian was employed.

Since that time the library has developped quite rapidly. Sint Maarten's growth and development had been tremendous, and the development of the library kept pace. Due to the increasing use of the library and the growing interest in reading, this new facility became soon to small, and the only solution appeared to be a new building, and the idea of requesting co-financing for a new library surfaced within the library board.

The personnel expanded from one staffmember in 1968 to five staffmembers in 1978 (13 at present).

Project background

The Kingdom of the Netherlands stimulates social and educational projects in their overseas territories by offering the possibility of financing 85% of the total cost of the project.

Various requirements are stipulated in order to qualify for this Dutch Development Aid.

An obvious requirement is the availibility of 15% of the total cost. Other requirements are:

* feasibility study over a period of ten years;
* standards;
* approval of governments;
* qualified manpower;
* proof of the possibility to support the library over a period of five years.

The foundation that runs the library did't have any funds, but went ahead and discussed the ideas of building a new library with an architectoral firm that was willing to work on a "no cure no pay" basis.
The local government provided the foundation with a plot of land of 4.000 m2 in long lease (60 years) for a token sum of one guilder per year (an equivalent of 65 cents U.S.). This plot of land had a great commercial value and constituted more than the required 15% .

Studies were made as to which building guidelines to use. It was decided to use the IFLA guidelines, and not the Dutch guidelines, bearing the fact in mind that St. Maarten is/was a developing country, as well as the international character of these guidelines.
In planning the library the number of inhabitants for the next ten years was estimated to be 16.000.
The total number of books would be 16.000 X 3 = 48.000.

A very essential factor was that the architect understood the purpose and functioning of a library and that architect and librarian were able to relate and communicate with each other.

Points_of_departure

1) The public library had to fit in the surrounding area:
The surrounding buildings are warehouse-type buildings;
2) the public access and readily accessibility aspect had to be very obvious (the architectural design is one of a visually openess and without any threshholds);
3) the IFLA-guidelines needed to be followed;
4) the expected population growth:
It was estimated that in five years' time the population would be 16.000. In reality the population grew to 40.000;
5) the public area had to be manned in the most economical way possible (with limited personnel):
St.Maarten has the characteristics of a developped country as well as of a developping country.
Skilled labour is scarce; qualified librarians are few.
The demand has been high, resulting in extremely high wages;
6) only groundlevel:
This requirement was related to # 5.
7) maintenance friendly;
8) suitable for the tropics (sea air):

hurricane-resistant;

non-corroding;

9) expansion possibilities;

10) flexibility;

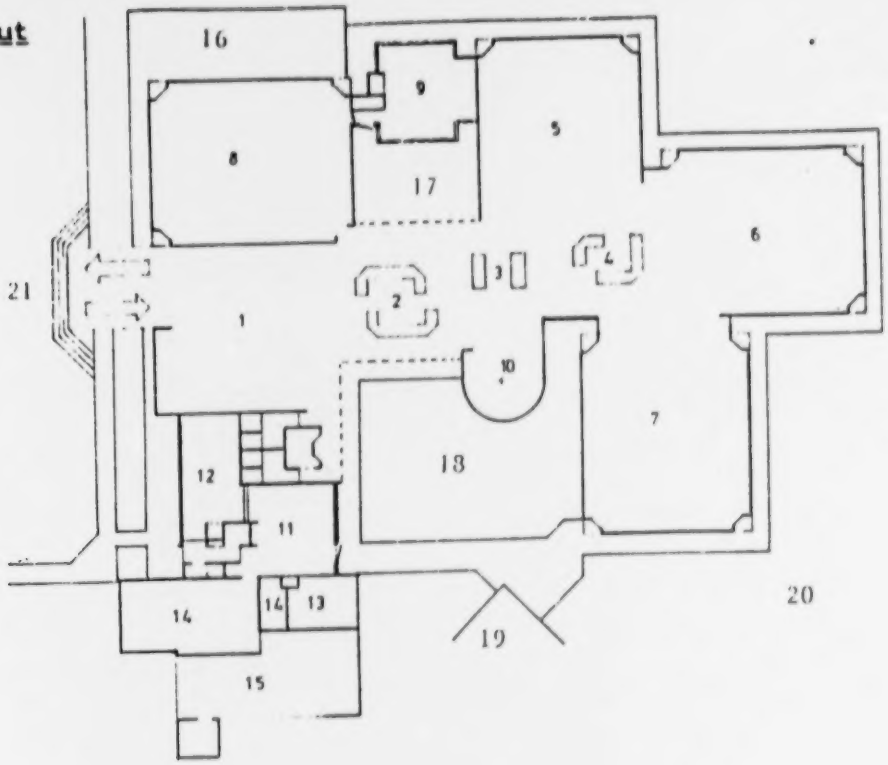
For this reason: large areas without a clear separation.

11) parking space

Design

The architect has tried to enhance the diversity of the building by playing with various heights. The entrance hall (1), administration (12) and circulation area (2, 3, 4) are housed in the lower L-shaped section. Around this L-shape four higher sections are grouped, containing the bookstacks and the reading room. The children's corner (10) is totally different both in shape and material.
To keep the maintenance cost as low as possible, only the study and administration area are airconditioned. As a result of this, the ventilation of the other areas needed special attention. For this reason use has been made of large over-head doors, enabling the wind to flow freely when these doors are opened. These doors are also used as "partition walls" between the hall and reading room and hall and circulation area. This provides an option to use the hall and readingroom for exhibits, lectures and performances outside the opening hours of the library. The washrooms (12) are then also available.

Lay-out



1. Entrance hall
2. Circulation desk
3. Catalogue
4. Readers' advisor
5. Non-fiction / Caribbean
6. Fiction / young adults
7. Juvenile area
8. Reading room
9. Studyroom
10. Children's corner
11. Office
12. Board/Meeting room
13. Director's office
14. Storage
15. Garage
16. Terrace
17. Patio (garden)
18. Garden
19. Pond
20. Extension possibility
21. Parking lot

The lay-out of the building is mainly based on two principles:

- routing of the users;
- maximum overview for both users and staffmembers.

Visitors enter the library through the spacious hall (1). Exhibitions are held there on a regular basis. The exhibits are always library-related. In the hall one can get a view of the reading room. From the hall visitors have to pass the circulation desk (2) in order to return their books. The circulation desk (80 m2) is like an island in a garden. There is just a narrow path along the circulation desk, and then on either side is an open area.

On their way to the bookstacks, users have to pass the catalogue (3) and the 'readers' advisor (4). The readers' advisor is very visible and has a rather good overview of the bookstacks.

Users need to pass the circulation area on their way out to register the out-going books.

From the circulation area, the staff has an overview (through the open garden) onto the airconditioned study with its glass pane.

Visitors can now opt to leave, or to enter the reading room (8), where they can read periodicals or make use of the reference materials. Local documentation can also be found here. The reading room (with a seating capacity of

52) offfers entrance to the airconditioned study (9) (with 14 study-carrels), where silence is mandatory. The photocopying facilities are just outside from the reading room. The office (11) and director's office (12) have one airconditioning unit, whereas the board room (12) has its own unit. This room can be used in and outside of library hours without interfering with office work. This area is away from the public area, but from the director's office there is a good view of the circulation area.
The floor of the storeroom (14) is of the same level as the bookmobile when it is parked in the garage, making it easily accessible. By fencing the garage it has been made into a multi-purpose area.

Structure and materials

To avoid flooding at any time, the existing groundlevel was raised by 80 cm, which is some 40 cm above sea level, after which the grounds were thoroughly impregnated to prevent woodlice, termites etc. On the prepared ground the concrete floorslabs were poured. One of the starting points for the architect in designing the building was having to work with a not so skilled labour-force. He had to face reality and reckon with the environment. For the afore mentioned reason and the poor quality of the available sand, building in concrete was

not one of the first options.

The workforce was, however, very eager to acquire new techniques.

A steel building skeleton was erected with sandwich wall panels, comprising of two layers of thin alu-steel with 4 cm of PUR-foam for insulation. The flat roof (with a 2% slant, due to the fact that flat roofs are not customary in Sint Martin, and therefore the skill to make them is not available) is also insulated with 3 cm of PUR-foam. The steelstructure (section 1,8,5,6,7 and back to 1) is completely galvanized to protect it from the environment (sea air).

The floors in the public area have rubber tiles to reduce noise. The airconditioned areas have ceramic tiles.

The ceilings have thin aluminum strips.

Furnishing

The furnishing of the library can be divided in three parts: (1) the bookstacks; (2) desks, chairs, tables etc. and (3) office equipment and household items.

The bookstacks, desks, chairs and tables all came from Holland. Although this was not required, it was felt as a moral duty to try and get our furnishing from Holland - since the monies were coming from there. BOMEFA was

chosen - as this company was specialised in library furnishing, and its furnishing was functional, and economical. Fear was expressed for corrosion and special care was taken to prevent this.
Bookstacks are 1.27 m (free) and 1.57 m (wall) in the children's area and 1.57 m (free) and 2.17 m (wall) in the other areas in order to enhance visibility. Informal seating had been created in the bookstack areas, but have been removed to more visibible areas.
Office equipment and household items have been purchased locally.

A uniform colour structure of both the interior and exterior has been maintained. The main colours are pigeon-blue, brown, beige and pink. The steel columns and sides of the bookstacks are pigeon-blue. The shelving is light grey and the sandwich panels of the building structure are of a light beige colour, as is the ceiling. Table tops and chairs are made of pinewood. The easy chairs are grey-blue. All exterior concrete walls are pink. The brown is used in the low hanging tube lights and in all signs.

Conclusion

The building is now in its eighth year and has proven to be very effective. It has succesfully stood up against

a hurricane. There are, however, some imperfections. It is not as cool - as was to be believed, and there is a great problem of dust.

In all, however, it can be said that the building has been proven to be very satisfactory.

We are proud to say that the Philipsburg Jubilee library has been regarded as an outstanding example of a public library building throughout the Caribbean area.

GENERAL CONFERENCE NEW DELHI 1992

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1992
NEW DELHI

If applicable:
WORKSHOP, THEME:
JOINT MEETING WITH:

DIVISION: MANAGEMENT AND TECHNOLOGY
SECTION: LIBRARY BUILDINGS AND EQUIPMENT

115-BUILD-2-E

MODEL ARCHITECTURAL DESIGN OF A LIBRARY: ADVANTAGES AND DEFECTS OF THE SOVIET EXPERIENCE

by

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ABSTRACT

To what extend the emergence and development of the so-called "standard" system of library buildings' design and erection in the USSR were natural? The explanation of that can be found in enormous scale provided by our country, recently total planning of its economic life which also produced a certain impact upon its culture.

In its ideal the system of standard design allows a new building to be built with less costs, and in shorter term; possessing a rational and at the same time flexible flow chart, a scientifically worked out set and area of premises, an approved planning and structural engineering conception.

But what about the ideal's feasibility - equally perfect buildings designed at a single centre for a multitude of public libraries in the multitudinous settlements situated in various regions of the country?

The answer to these questions is contained in the analysis of the author's own research and design works.

MODEL ARCHITECTURAL DESIGN OF A LIBRARY: ADVANTAGES AND DEFECTS OF THE SOVIET EXPERIENCE

The Soviet Union has vanished in the Past. The monolith varnished image of the Great Culture of the Great Country which has been formed for decennaries is going away from the consciousness.

The Soviet Librarianship presented itself at international forums as an integral part of this state myth.

The Moscow IFLA Congress in 1991 was marked with bitter irony, where representatives of library public from all over the world could see with their own eyes the deceptive stability of Soviet State machine which only seemed to be reliable and well adjusted.

However, the time goes on and the Library called by its own nature to be <u>over</u> the politics keeps living and working.

The comprehensive objective analysis of scientific and cultural heritage in the field of librarianship in the USSR for the period of 74 years is still ahead. But two tendencies mutually exclusive have been revealed in this process already to-day: regarding the Soviet period of library history as absolutely positive and as absolutely negative.

And the problem is not as that simple. Taking only one rather local example of the emergence and development of the standard designing system of libraries in the USSR one could see how intricate are the "advantageous" and "defective" aspects of any problem.

Proceeding from the stipulated conciseness of the report I shall mark only recapitulative aspects of the problem of library architecture. I have been working on this problem for already 15 years. (See, f.e. [1, 2, 3]).

The rigidly planned and "super centralised" standard design system was a logical consequence of the command planned economy and the State monoideology that reigned in the USSR. (So, the "principle of Party-membership" is the first to be indicated among the factors forming the basis for the librarianship planning). The indices of growth of the libraries'network and even the rate of the population using them were included in the plans for economic and social development at the state's level what supposed their undoubted implementation.

A single nomenclature of the dozens of standard designs for public libraries was set up. It was worked out after the common town-building standards for the whole country comprising central and branch, district and regional, children and adults', urban and rural libraries as well as those for the North and the South, for seismic and permafrost regions in panel and framework structures, in masonry and reinforced concrete, detached library buildings and library premises built in residential or public complexes having capacity of 5 to 750 thousand storage items - and so on and so forth. Classification indications will be enumerated later on.

This system subjected to renewal and additions from year to year after the State order coming from above and improved by the Central scientific and design institutes ideally integrated with artificially constructed idealised system of Centralisation of public libraries.

As it is known a good intention of Centralisation which has been started already in the first years of the Soviet Power was to achieve <u>equal</u> (high, if possible) standard of mass-range library service with <u>equal</u> accessibility of libraries to <u>all</u> the inhabitants of the whole vast territory of the USSR. With a view to attain this goal the planned and even territorial distribution of libraries

(programmes of the 80ies envisaged putting into operation about thousand of new libraries annually) brought forth the necessity of disseminating standard architectural and design conceptions all over the country though abstract and mean but rather acceptable, "adhering" to the main technological and civil-engineering norms and standards.

Can twenty-thirty ideal samples meet the infinitely variable needs and conditions of existence of thousands of libraries? Utopism of such an approach to the problems seems to-day evident.

Though, utopism of many social ideas forming the basis for the politics and economy of the Soviet society turned to be as evident as that.

Standard design in its exhaustive variant was conceived as a complete set of detailed, so-called "up to every nail" architectural and construction drawings of a library building well worked out and supplied with all the engineering and financial documentation. Where does its real expediency lie?

A sufficiently grounded choice of capacity of a building - the volume of the book stocks and a quantity of reader's and service seats; an attempt to achieve a functional variety in library standards responding the age difference of readers' contingents; the set of premises and the equipment they contain well thought over; rational technological and planning connections and "flexible" space models; a thoroughly done analysis of areas in strict adherence to the standards; with a view to achieve at minimum the required level of comfort of the physical environment; the approbated and economically effective engineering and civil-engineering conception envisaging rather short term of building erection - this is a standard design in its ideal.

One should also take into account that really professional experts-analysers from large Moscow design institutes took part in the elaboration of these designs; that a very serious research often preceded the formation of a conceptual design programme; that the designs underwent complicated multi-phase examinations - approbations.

Yes, under the conditions of the Soviet Union where leading architectural and scientific forces were concentrated only in a few municipal cities the system of dissemination of standard desings from the single centre looks to be rather justified. The specialists "in localities" had "only" to choose the appropriate design and to apply it for the construction of a new library building avoiding as many mistakes as possible.

But the main reason in favour of the standard design system is as follows: against the background of the common lamentable state of the "material and technical basis" of dozens of thousands of public libraries on the territory of the former USSR when only 10% of them are placed in specially constructed buildings; when a large number of libraries are literally huddling in ground floors of dwelling houses hardly adoptable for library functions; when such libraries lack necessary premises and areas of primary importanne; when books they contain undergo damage caused by improper storage conditions and the employees and visitors are depressed with the discomfort of the environment - against this background the emergence of every professionally designed building can not be perceived but positively.

The fact of further development of industrial methods in design and construction in certain times common for modern architecture, typification and unification of three-dimensional and spatial elements, standardisation of buildings, their structural conceptions,

finishing materials, equipment, engineering and technical maintenance systems have exerted a rather serious impact to the formation of standard library designs. This standartisation touched upon libraries though not to the extent as in housing and it set up the problem before us of search for peculiarity, an obligatory unique character and new stylistic tendency in environmental performance.

At the same time the process of standard designing of libraries regarding the demand for industrialization of construction and economy conscious architectural conceptions as of paramount importance thus predetermining the emergence of a number of independent problems arising from mainly quantitative indices of a library building.

For all this, behind the rationality of analysis formulas for areas of premises, a quantity of book stocks, catalogues, working and readers' seats one failed to see practically neither a living human being who with his activity is destined to animate the library space, not this very activity in all its variety, nor a concrete locality posessing landscape characteristics proper only to it, as well as natural and town-planning environment, irrepeatable historical and socio-cultural values.

In this relation numerous facts of functional and planning corrections or even a complete alteration of standard designs caused by the necessity of their responding to local conditions seem entirely natural.

In the course of the research carried out by me in many towns and settlements of the former USSR different trends in alterations were revealed: a different placing of a library in a building (f.i. being extended or built-in a complex of residential or public buildings); alteration of external load-bearing structures (new light apertures, materials, forms of coating, a different aspect of the elevation); alterations of the inner load-bearing structures

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(a framework instead wall structures, shifting, annulation or introduction of new partitions); the change in the function of premises; redistribution of areas among structural subdivisions; the increase of a library area (f.i. arrangement of a children or youth departments there) at the expense of building over a floor or a lean-to block; the change in destination and status of a library distinct from a standard design (a branch library instead of a central one, a library with a children department instead of an adults one); the use of the design for a library of different capacity - book stocks or number of seats; alteration in the engineering part of a building (building and finishing materials, technical equipment, mechanization, heating and ventilation systems); alteration of finishing and furnishings, interiors, etc. [2]

The complexity in adapting a standard design to concrete conditions is one of the reasons for relatively small numbers referring to application of standard library designs appearing in summaries of statistic accounts. Lack of information of potential clients of the availability and peculiarities of this or that standard design of the buildings constructed after it, of organizational questions related to its choice, ordering and design scheme adaptation were and are among other explanation to that.

Unfortunately, there are no clearly worked out copy-right regulations for standard design documentation in the country, the same refers as well to the Law on intellectual property. The very typification system existing in the country is primarily likely to debar the author from the participation in the ulterior fate of his design. The architect owing to his territorial aloofness and organisational non-participation and lack of material and moral concern for the final result of his crativity is not only deprived of the opportunity to object to often unprofessional alterations in the

design deteriorating the building (or assist in its scheme adaptation) but he is not even aware of the very fact of its use.

It goes without saying that anonymity of standard designing of no prestige and profit for an architect, lack of feed-back with the client and the user (in this case the librarian and the reader) along with other factors produce a negative effect on the quality of the very designs.

In many cases and first of all where there are rather professional and interesting architectural and engineering personnel and large building organizations the preference there would be given not to the design, but to the design functional-planning and technological scheme allowing more creative approach towards the creation of a concrete architectural project. [illegible]. But in these cases (unfortunately rather rare in the country) the analysis of the opinions of local designers proves that it turns out to be more convenient for them to get a ready-made design for their further interpretation (alterations, modifications, amendments, decorations and even assuming their own copyright). It is a ready architectural analogue or standard which could serve as the basis and which could be compared with a view to perfect his own creation.

So, the acuteness of the problem is seen to-day in the state of the standard design system in the whole and in the quality of the very standard designs (they should posess the qualities of a flexible and easily adaptable organism besides optimum technological conception). The acuteness of the problem lies in the ways of their publicity and the soonest possible reaching a potential and real client or in the soundness of this choice or, what is still more important, in the methods of getting the users' evaluations of the already realised projects. The problem is in carrying out the feed-back with the practice.

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It is evident that when a library gets a new building or the equipment the comfort of being there is not assured, the more so, as the idea of renovation and transformation of the existing premises keeps being extremely actual in the future as well. In the research of the author of the present report the aspects which are traditionally left aside of the field of action of librarians, technologists and after them of designers are considered. They are peculiarities of the environmental formation in the course of the operation of an architectural project. [1].

To-day the reorientation towards the qualitative evaluations and characteristics of the libraries' design and material base is needed, from extensive towards intensive way of development, towards activating the use of the building's inner resources with a view to form a variable and attractive environment.

Two main concepts of optimizing the planning and environmental conception of libraries should be stressed.

This is the necessary availability of maximum as far as possible variety of the sojourn conditions of human being in a library space (in any certain case the optimum level of comfort should be kept to) and then - "flexibility" of spatial characteristics assuring this variety.

The required set of functional subdivisions of the central and branch libraries (in a number of cases in large libraries having a large staff of employees they are independent structural elements of the institution, they are more often relatively small zones inside a certain department) is fixed in the Illustrarion 1. The necessary and desirable interconnections among subdivisions (premises or zones) are shown here in graphics.

The graphic models schematically illustrating the interlocation of the main functional zones as well as vertical and horisontal

connections among them and the main routes of readers and informative material flows show the peculiarities of each model (lying, in particular, in different flexibility degrees of planning conceptions).

The proposed design conceptions are characterized by the quality denominated as two-level differentiation in environmental conditions. This terminology means, on the one hand, functionally stipulated differentiation among separate zones (subdivisions, departments) catering for large groups of readers united by similar aims, literary preferences, difference in age and field of activity. The second differentiation level enables the readers having different socio-psychological parameters of behaviour find their "own place" inside a certain zone.

Going on to obligatory conditions for optimizing the environment contained in the notion "flexibility" two aspects should be stressed: providing at the expense of flexible conceptions the necessary re-distribution of areas among different library subdivisions and providing qualitative modifications of environmental characteristics with a view to have the opportunity to choose the various places for reading activity.

Flexible planning is mainly oriented towards moving away the terms of moral ageing of library buildings at the expense of bringing their compositional and planning conceptions to conformity with changing conditions of libraries' functionning.

These leading principles of the organization of in-library space were reflected in design developments (with the participation of the author of the present report) of a number of concrete standard library buildings.

So, three-dimensional planning blocks presented in the Illustration 2 for the children and adults' departments of a branch

library serve as an example to the realization of principles assuring a full range of services and the freedom in their choice, easy orientation and flexible planning on the basis of a single spatial conception of a rather small project for a mass range library network.

These principles were brought to life in a different way when forming rather more complicated projects (Illustrarion 3 shows plans of their ground floors). The developed functional structure of central libraries, availability of many service-production departments, including a large book depository, vast zones of readers' servicing (subscriptions specialized in readers' ages and range of interests, reading rooms, club premises). These peculiarities of functional organization required torey by-storey "branching" of structural subdivisions, emergence of vertical connections, a powerful communication node with skylight functionning also as and avant-hall and lounge zone. Planning flexibility principle is realized here on considerable areas of reading zones.

Concluding the report I should like to note, that in the course of the author's research and practical elaborations the hypothesis of the basic importance of the parameters of the in-library environment and of its such multi-component category as comfort needed to achieve an effective functionning of a library found its reflection. This imply optimization of spatial and planning conceptions both of a library in the whole and of its every functional zone, its light and colour relations, the choice of equipment and the finishing materials, engineering and physical and socio-psychological parameters, as well as environmental characteristics, architectural and artistic interior characteristics integrating with it the elements of visual communications and natural environment. A comfortable and harmonized environment favours achieving the common

positive emotional state of a human being at the expense of his requirements being met and stimulating his visits and sojourns in a public library.

Only in a free, variable, flexible and "open" to changes harmonious architectural environment thanks to carrying out his effective and independent activity can the reader realize his creative and spiritual potential in full measure.

This lessons of forming library environment are in prospect to be mastered and embodied by those who elaborate standard library designs.

REFERENCES

1. Zimonenko, Anna. Principles of Inner Space Arrangements of Public Libraries. (Dissertation). Moscow: VNTIC, 1988.

2. Zimonenko, Anna. Problems of the Standard Designing of Model Public Libraries. (Collected papers of the L.S.Mesentzev Institute). Moscow: 1988.

3. Zimonenko, Anna. The Album of National Functional/Planning Conceptions of Modern Libraries for Children and Youth. Moscow: Ministry of Culture of the USSR, 1990.

Anna Zimonenko

March 1992

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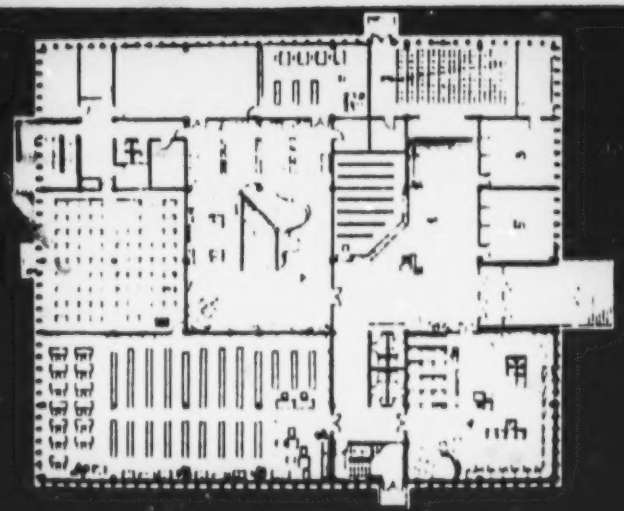
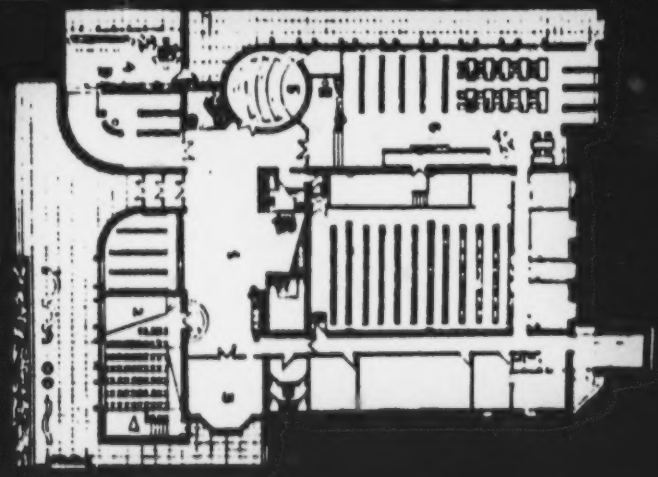
ФОРМИРОВАНИЕ ИНТЕРЬЕРОВ ТИПОВЫХ ЦЕНТРАЛЬНЫХ БИБЛИОТЕК

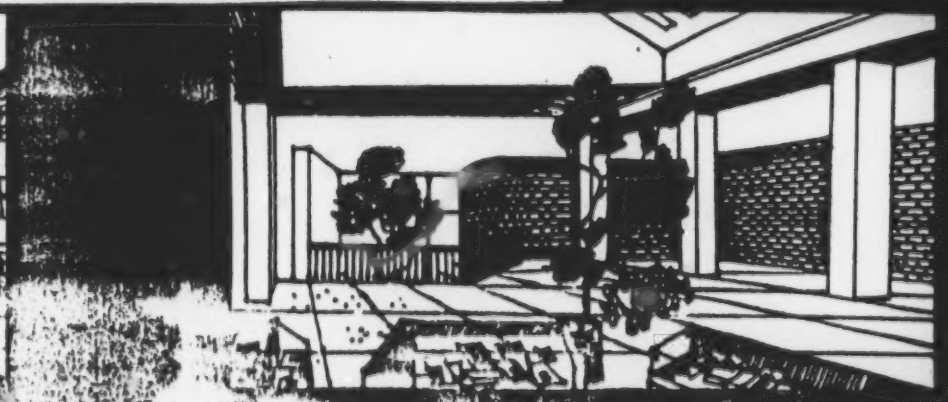
Ill. 3. THE VARIANTS OF THE AUTHOR'S DESIGN CONCEPTION OF THE STANDARD CENTRAL LIBRARIES





ЦБ НА 200 Т.Е.Х. ЦБ НА 120 Т.Е.Х.

WITH CAPACITY OF 120 AND 200 THOUSAND STORAGE ITEMS.



THE PLANS OF THE GROUND FLOORS AND INTERIORS.

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Annotation for the Ill. 1

A. DIFFERENT GRAPHIC MODELS OF A PLANNING VARIANT FOR A LIBRARY IN ONE BUILDING.

The required set of functional subdivisions and areas:

1. Main Entrance
2. Reception/Exhibit Areas with Circulation Desk, Reference and Catalogues
3. Open Access Bookstacks
4. Reading Areas and Special Collections for Different Groups of Users.
5. Seminar Areas
6. Conference-Hall
7. Offices
8. Storage Stacks and Reserve Books.
9. Staff Work Rooms and Administrative Offices
10. Technical Processes Rooms
11. Cafeteria
12. Relaxation Area
13. Staff Entrance
14. Washrooms

B. DIFFERENT GRAPHIC MODELS OF A PLANNING VARIANT FOR A LIBRARY IN SEVERAL BUILDINGS.

The required set of functional subdivisions and areas:

1. Entrance
2. Reception/Exhibit Areas with Circulation Desk, Reference and Catalogues
3. Reading Areas and Special Collections for Different Groups of Users
4. Seminar Areas
5. Conference-Hall
6. Subdivision of Open Access Bookstacks
7. Offices
8. Storage Stacks and Reserve Books
9. Staff Work Rooms and Reserve books
10. Technical Processes Rooms
11. Cafeteria

C. CONVENTIONAL SIGNS.

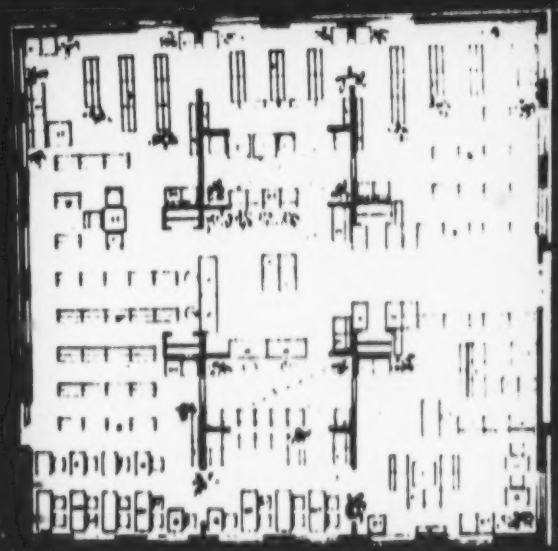
- The Necessary Interconnections among Areas
- The Desirable Interconnections among Areas
- The Main Technological Routes

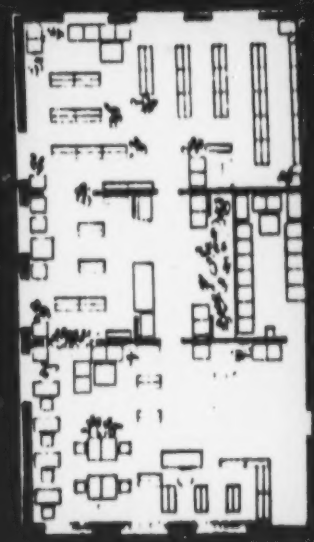
1. Open Access Bookstacks
2. Reading Areas and Special Collections for Different Groups of Users
3. Reception/Exhibit Areas with Circulation Desk, Reference and Catalogues
4. Meeting Rooms
5. Offices
6. Storage Stacks and Reserve Books
7. Staff Work Rooms and Administrative offices
8. Entrance and Relaxation Areas

ПРОЕКТНАЯ ОРГАНИЗАЦИЯ ТИПОВОЙ ФИЛИАЛЬНОЙ БИБЛИОТЕКИ

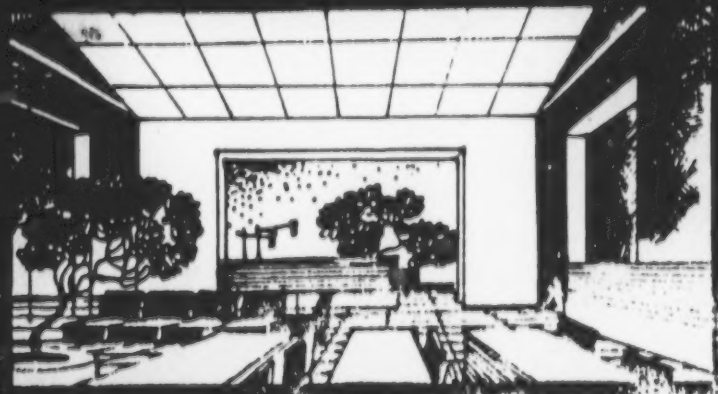
.2.

VARIANTS OF THE AUTHOR'S DESIGN CONCEPTION OF THE STANDARD LIBRARY THREE-DIMENTIONAL PLANNING BLOCKS.





БЛОК ДЕТСКОГО ОТДЕЛЕНИЯ



THE PLANS AND INTERIORS FRAGMENTS OF THE CHILDREN AND ADULT DEPARTMENTS.

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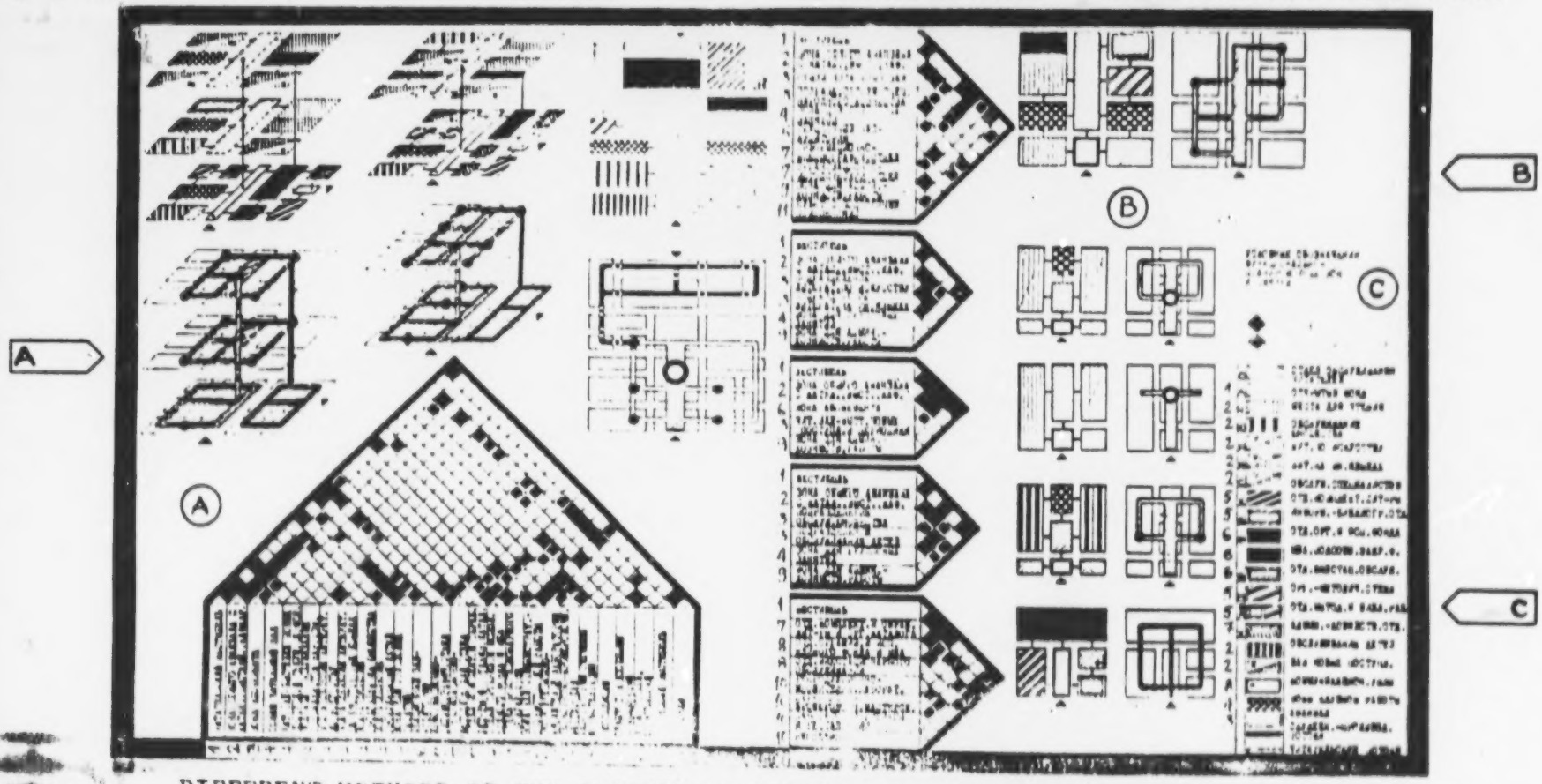
РАЦИОНАЛЬНЫЕ МОДЕЛИ ФУНКЦИОНАЛЬНО-ПЛАНИРОВОЧНЫХ СТРУКТУР МАССОВЫХ БИБЛИОТЕ

Ill. 1. THE RATIONAL MODELS OF THE FUNCTIONAL/PLANNING STRUCTURES OF PUBLIC LIBRARY BUILDINGS.



DIFFERENT METHODS OF THE GRAPHIC MODELLING WITH DEMONSTRARION OF THE MAIN LIBRARY FUNCTIONAL ZONES AND THEIR INTERLOCATION.

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IFLA GENERAL CONFERENCE NEW DELHI 1992

Division: MANAGEMENT AND TECHNOLOGY

Section/RT: INFORMATION TECHNOLOGY

Joint Meeting with:

125-INF-3-E

WORKSHOP THEME (IF APPLICABLE):

Automated Strategies for Social Development

Kris S. Oswalt
Community Systems Foundation
1130 Hill Street
Ann Arbor, Michigan

For internal use only:

Meeting No: 91

SI: ~~yes~~/no

Estimated number of participants in the meeting:

100 copies

Introduction

Community Systems Foundation is a non-profit organization committed to the improvement of the quality of life within communities through applied research to promote the effective use of information systems for social advancement. The Foundation is dedicated to extend the benefits of global information technologies to the developing world through the introduction of automation strategies aimed at community planning, management, monitoring and evaluation. This paper discusses the Foundation's approach to automation strategies to overcome significant barriers. These strategies are equally applicable both to social development projects and library and information service automation programs.

Information Technology for Development

Today the successful introduction of information technology is more dependent on knowledge and training than on physical constraints on the capacity and reliability of the computers used to provide the services. Surprisingly, this holds true almost everywhere now, even in the developing world.

A remarkable fact about recent innovations in information technology is that while the technology's hardware continues to rapidly shrink in size and cost its related software potency swells exponentially. In two decades, computers have been reduced from mainframes, to minis, micros, laptops, notebooks, and now palmtops. Mass storage devices have been condensed from machines the size of washing machines to sleek compact disks a few millimeters thick. For example, this has made it possible for the 4 million records of the Library of Congress MARC bibliographic database to be distributed on seven compact disks with 680 MB of data on each disk.

Today's computers are not only smaller but more rugged, too. Many are well adapted to operate in hot and humid environments without the expensive infrastructure previously required: glass-walled cabins, industrial-strength air conditioning, false floors for a labyrinth of cables, and a power generator or two. These computers are made of integrated chips and circuits which are have a significantly higher tolerance for heat and humidity than the systems of a few years ago.

Hardware maintenance and support for information systems have become more reliable, even when installed in harsh environments. While computer technicians are not readily available everywhere, new diagnostic software and hardware greatly aid in analysis and repair. Thus, more and more hardware maintenance tasks are being carried out by users rather than engineers. The weakest link in the hardware chain is obtaining parts. It remains a necessity to self-stock in isolated locations, or have full knowledge of where and how to obtain parts for the type of equipment being used. The Foundation has worked around this problem in its projects in several ways, depending on the locale. Where feasible, the projects

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Abstract

Information technology is a major force behind the advancement of global development including social and health programs and libraries and information centers. In many areas of the world, the application of information technology is responsible for community systems which have enhanced performance, improved efficiency, increased adaptability, and streamlined problem solving. In this paper we argue for the extension of information technology for social development at the community level. Many successful strategies are beginning to make profound enhancements to the quality of life in otherwise isolated or disadvantaged social sectors. Three case studies are discussed which illustrate these types of breakthroughs. A number of impediments to the realization of information technology for development are identified. However, it is shown that these impediments are rapidly being overcome, and that the future of information systems for community development promises to bring about rapid social advancement.

have planned for redundancy in the number of computers required, so that when one computer is down, the entire automation process does not grind to a halt. Where redundancy is too expensive, essential components which are known to fail more often than others have been stocked, such as, an extra power supply and an extra hard drive.

Advanced electronic devices are in wide-spread use to regulate and supply uninterrupted power to computer systems. These devices monitor the power supplied to the computer so that if the voltage shoots above a safe range, the device filters out the surge and maintains constant voltage to the computer. If the power falls below an acceptable point or is completely interrupted, the device uses internal batteries to maintain constant power to the computer for a few minutes until the computer can be shutdown safely. In both cases, the adjustments to voltage fluctuations are made instantaneously so the computer can continue to operate without being damaged from voltage spikes and without going dead when the electricity goes off.

Elaborate software utilities can be used to automatically archive and backup system data to minimize downtime and speed recovery in the event of system failure. These utilities save computer information on floppy diskettes and cartridge tapes so that in the event of a hard disk crash, the data can be restored once the hardware is repaired.

While hardware has become more portable and reliable, software has become both more sophisticated and easier to learn to use. Today users focus on software applications rather than computer languages by implementing off-the-shelf packages. Basic software applications now common to most software libraries include a word processor, spreadsheet, database manager and communications package. Systems analysts use these tools to design automation strategies which are easier to maintain and quickly adapt to new software and hardware innovations.

Software applications can now provide elegant solutions to the design of information systems which conform uniformly to an organization's basic objectives, but provide flexibility for site adaptations. The introduction of information technology now focuses on the integration of software tools into an automation strategy. Systems analysts and automation strategy planners are taking over from where programmers used to play the key role in information technology.

Global telecommunications are radically changing the way people communicate. As electronic communications improve, it becomes simpler and more economical to provide high-quality support and maintenance for computer software, even in isolated locations. Satellites now electronically link many countries by electronic mail, voice mail, and, soon, video mail: all important channels through which technical support for information technology can now be provided.

Powerful information technology has become affordable and readily accessible

to an ever widening global market. This affordability and accessibility are the principal forces now propelling the revolution in the application of information technology in the developing world. Here are descriptions of some new information technology users which have been associated with the Foundation in the last few months: a social researcher in a village near Hyderabad, India interviewed mothers about child health care and recorded the data on a microcomputer; a water and sanitation engineer near Bamako, Mali logged the latitude and longitude of a new well through a palmtop linked to a satellite network; an acquisitions librarian in the Cairo field office of the Library of Congress ordered a subscription for a U.S. university on an automated order and distribution system; a health worker in the Zou Province of Benin mapped UNICEF village data on safe drinking water points using a geographic information system; and a team of epidemiologists statistically analyzed the problems of Vitamin A deficiency in the Eastern Islands of Indonesia for WHO.

Three Case Studies

Three case studies in the application of successful information technology strategies for development are discussed below. The first case illustrates innovations in the use of automated monitoring and evaluation tools to enhance the performance of health and nutrition programs in remote areas of the world. The second case shows how researchers, public administrators, and entrepreneurs in geographically isolated locations are now able to benefit from global access to rich databases of information vital to the success of their endeavors. The third case considers the rapid improvements in information technology which promote literacy.

Case 1: Information Services for Social Development

The Integrated Child Development Services scheme is a Government of India program to promote the healthy development of young children and their mothers in disadvantaged social sectors. The scheme provides food supplementation, health services, and non-formal education to preschoolers through social welfare volunteers at the village level. ICDS is already the largest program of its kind in the world, and is likely to double in size during the next few years as it expands to cover all of India. A significant element of the successful expansion of ICDS has been a strategy to harness the power of information technology to effectively monitor and evaluate the services provided to the beneficiaries of the program. To use advanced technology in this program, it was necessary to overcome a number of "introduction" difficulties. This project reaches out into the villages of India where power can be weak or uncertain, where education levels are not high, and where heat can reach 40 degrees centigrade in the summer and monsoons can cause 100 percent humidity for a two-month stretch.

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In the first installations the introduction of the system was planned around the use of automation in state capitals where the problems of power supply and harsh physical environments were less acute. The automation strategy relied on an extensive manually operated information system to link the villages to state headquarters. Over time, both infrastructure enhancements and improvements in the general technology have enabled us to expand automation down to the district and village levels.

The heat and humidity both took their toll in the early days of this project. At one point several years ago, the hard drives of the pilot study computers crashed frequently and their internal power supplies were faulty which resulted in numerous and abrupt system failures. Eventually, these computers were replaced, and since then the reliability of the new equipment has enabled us to practically ignore these environmental factors. The project now is using industry-standard microcomputer components assembled in India which have proven to be remarkably tolerant to dust, heat and humidity.

Finding or training skilled operators was a major challenge, but at the same time it enabled ICDS to offer opportunities to individuals involved in social development. Workshops were organized to provide hands-on training to system operators. Executive seminars where organized to help senior administrators to become aware of the enormous potential of the system to improve ICDS performance. Some ICDS field employees have taken their new skills on to new jobs, so the training process is constant and continues to enrich the professional skills of those involved in the program.

The ICDS management information system innovatively applies information technology for the welfare of disadvantaged children and their mothers through community mobilization. The system is based on the principal that robust social development begins at the community level and that community information can be a powerful agent to bring about favorable and vigorous change. The ICDS MIS is an exceptional example of how information technology can be used to overcome previously insurmountable development hurdles. The system integrates information from tribal, urban and rural areas. Data collected in many local languages are integrated into a common national database used for program management.

The key to the success of the ICDS MIS is rapid feedback of relevant information to those who can make decisions and take action. This is made possible in part by the national network for data exchange which is now operational down to the district level. Another important factor is the system's national uniformity with respect to core information handled by the system. But, at the same time, the system is flexible. It can quickly adapt to local requirements for specific types of information in addition to the national data set. This adaptability encourages the involvement of the community leaders in the design of the system and promotes

their perception as its owners. This is a key feature of this automated system and the same is needed in the library environment. A nationally accepted communications format for bibliographic data, such as IFLA's UNIMARC or USMARC, is basic to building a responsive and economical library infrastructure.

Another important aspect of the system is that it is based on downsized hardware: the system can operate on low-level microcomputers suited to the harsh environments in some of the locations where the system is required. However, the system is scalable. It produces better results on better hardware, such as, at state and central level installations.

In another similar social development program, UNICEF is investigating ways to use information technology to eradicate a major disease: *Dracunculiasis* or guinea worm. There are an estimated 25,000 villages in eighteen countries, mostly in West Africa, which are plagued by this disease. UNICEF is committed to the eradication of guinea worm by 1995. Their eradication plan is based on a decision-support system which links community-based information to action plans for the equitable allocation of resources and implementation of program interventions. Under this program, information technology is being used to collect and analyze multisectoral data to provide local administrators with the information required to run the eradication program. For example, the system can compare the level of guinea worm incidence in all villages in a district to key interactive indicators on interventions to combat the disease, such as the presence or absence of: a health center, a well, a pump, a primary school, a water committee and a health committee. The decision-support system can then create a map of the district to illustrate the villages with the highest level of guinea worm incidence and the lowest level of capacity to deal with the problem. In this strategy, UNICEF is using information technology to concentrate resources where they are most likely to have the greatest impact in remote villages of Africa.

The factors inhibiting the introduction of technology in Africa are surprisingly similar to those faced in India a few years ago. There are many problems with unreliable electricity and a scarcity of computer technicians and spare parts. In most African countries, computer systems are imported, not locally assembled. Therefore, in most regions the entire industry for the sales, training, support and maintenance of information technology is weak. However, in many major cities, such as, Abidjan, Lagos, Dakar, Harare, and Nairobi, the introduction of information technology is moving ahead rapidly and will gradually begin to have a positive impact on social development across the continent.

Case 2: Information Services for Development in Isolated Areas

The growth of multinational online communication is opening rich new channels of access to information for geographically isolated professionals. These electronic

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networks are beginning to link people from all levels together, regardless of expertise, location, or culture.

Electronic mail, or e-mail, has brought a new perspective to global communications. Not long ago, one only posted letters by surface or by air. Now, many letters are posted by e-mail or fax that are delivered instantaneously almost anywhere. These information services have quickly penetrated into almost every country of the world, even into isolated villages in Asia and Africa. For example, as one travels these days through small towns and villages across India, one often finds a brightly painted sign right next to the eggs, milk and bread at the local provision store with the letters "ITD/STD/FAX" where one can make an international telephone call or send a facsimile.

Electronic forums permit professionals with common interests to communicate with their colleagues. These electronic bulletin boards help partners share ideas, seek technical assistance, swap notes, and learn from the experiences of each other. Forums were first created for computer professionals, but they have rapidly branched out to cover a extensive range of topics, such as, libraries and information services, aviation, education, science and technology, business, finance, health and fitness, sports, and travel. Global forums are rapidly developing which link professionals from many countries.

Databases of online reference materials provide researchers with a broad range of information services which are updated regularly. There are online encyclopedias which can be searched by topic; business directories which include descriptions of firms and products; and online newspapers and magazines where articles can be retrieved by key words. Other electronic references cover subjects such as: news, weather, books in print, who's who, consumer reports, health, demographics, and legal services.

Online information services offer resources at costs which take advantage of a large number of users. It would not be practical for individual organizations to build large databases of information without being able to provide access to large groups of users. Improvements in information technology and international telephone networks have increased the accessibility of these services to more and more people around the world.

E-mail, electronic forums, and online information systems are an important component of the development of automation strategies, especially for strategies designed for professionals in isolated areas. Through these advances in information technology, a sorghum plant pathologist at a Nigerian university can now -- while seated in the laboratory -- scan an international database of agricultural literature for studies related to current research objectives. A public administrator posted to a remote Indian village can look up relevant census, health and education information from a microcomputer linked to the government's national information network

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system. An entrepreneur eager to start a new business in a developing country can monitor stocks and bond investments at home while overseas, all from a hotel room telephone. A librarian in Sophia can identify current publications printed in French on the economic objectives of the EEC.

Case 3: Information Services for Universal Literacy

The core of the development of information services has always been in the so-called developed world, and until recently the look and feel of the technology itself offered an undeniably and overwhelmingly American flavor in everything from the technical literature about the tools of the trade to the colloquialisms used for commands displayed on computer screens. However, three recent transfigurations of information technology have begun to reorient the technology to our expanded, more diverse global community. These adaptations are helping to promote scholarship and learning through information services for individuals who were previously unable to take advantage of the technology because of language barriers or technological isolation.

The first phase of transfigurations came a few years ago with technology which transformed dull, monochrome computer text into graphic presentations. With the software and hardware to display and print graphic images, information technology began to break through the barriers to learning and understanding that had been created by differences in language and culture. The script issues were first addressed by image technology. Computer software gradually began to adapt to the scripts of non-Roman languages until computers can now communicate in many scripts: Arabic, Chinese, Hebrew, Hindi, Japanese, Korean, Telugu, Thai, Tamil, and many more. Automation strategies for the introduction of information technology now include important decisions about the selection of appropriate language and font capabilities of the system. While off-the-shelf hardware and software to handle these scripts is still limited, availability has been increasing rapidly since the late 1980s. There are word processing packages readily found and progress is being made with full application systems, such as integrated library systems. For example, the Foundation is involved in the design of a dual-language national primary health care system in which all data entry and report generation will be done in either the local language, English, or both. This feature of the system will facilitate the entry and utilization of the data at the community level where many of the health workers do not know English.

The second phase of transfigurations came with the introduction of improved user interfaces: user-friendly technology. Icon driven software is now widely used in the world of computer interfaces. The icons -- miniature graphic symbols which transcend language barriers -- now appear on computer screens where text-based menus of commands once existed. Users simply "point and shoot" at icons to load

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and run powerful computer software. These graphic user interfaces can greatly simplify learning how to use information technology as they can be used to overcome language barriers. Today computers can be almost as easy to use as televisions and telephones.

A third phase in the transfiguration of information technology is now underway: multimedia technology. Multimedia computers integrate video and audio data with the logic and control of computer software to present an exhilarating new form of education and entertainment. An ordinary microcomputer can become a multimedia workstation with the addition of three relatively inexpensive devices: a high resolution graphics card, a fast compact disk drive, and a stereo sound card. Once installed, the multimedia platform opens a whole new world of interactive learning. Just one example: imagine opening a multimedia encyclopedia packed with a full-color illustration of your favorite painting by Van Gogh, an animated diagram of how the thrusters of a space shuttle work, a brilliant piano sonata by Mozart with the manuscript displayed as the notes are played, and a self-directed video ride on a rickshaw through the streets of Calcutta. All this, and more, in any language of your choice and on demand. Multimedia training and online references could play a vital role in automation strategies for development this decade and beyond.

Conclusion

Sustainable social development can only be attained through responsible stewardship of global resources for the benefit of our own communities and for those of future generations. Social change, at any level, depends on perceptions, which in turn are influenced by whatever information is available. This development process involves perceptions within world-wide organizations, governments, cities, towns, villages, families, and individuals and all their different needs for information.

Extensive work is underway to introduce appropriate information technology for effective social development. The technology holds great promise in its capacity to respond to the demand for relevant and reliable information. The technology is beginning to help communities in many different countries around the world to think globally, to be better informed before taking local action, and to take into their own hands the responsibility to foster social advancement.

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Section/RT INFORMATION TECHNOLOGY

Joint Meeting with:

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COMPUTER AND SOFTWARE FOR INFORMATION SERVICES: AN OVERVIEW OF MEXICAN PROGRESS.

by

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1. INTRODUCTION

Mexico has the largest population of the Spanish speaking world with 85 million people, whose literacy rate is 90%. Education is widespread. There are more than 5,000 libraries of all types [3], including a national library and a national periodical collection. Library automation shows some advances but development is not even among libraries. In this work, Mexico's progress in the use of computers and development of software is described, discussing problems faced by libraries in the acquisition of hardware, factors that influenced development of local software, and listing present and future automation challenges.

2. COMPUTERS' USE EVOLUTION

The use of computers in Mexico has followed, in certain ways, the same path other countries have experienced. Libraries queued for computing time in large organizations as early as the 1960's, when mainframe computers were the only means to automate. However, most library automation projects did not get beyond creating lists of periodicals, or other type of holdings due to the fact that libraries had to compete with "more important" administrative demands of other departments. On the other hand, few libraries had computers in their parent organizations.

Minicomputers offered more chances for libraries to explore automation possibilities, because there was a greater number of them available compared to mainframes, but as in the previous stage of computer evolution, libraries did not achieve great progress. Minicomputers were still beyond library budgets, except for a handful of institutions which had the means to acquire them. However, the arrival of microcomputers in the second half of the 1980's set the pace for automation in an ever increasing number of libraries, especially in medium-sized to large libraries.

3. LEADING ROLE OF TWO UNIVERSITY LIBRARIES

University libraries have been the leading institutions in automation. UNAM, the National University, was the first academic institution to develop a mainframe software which was started in 1974. UNAM's software, called LIBRUNAM, was originally a cataloging project whose aim was to get rid of backlogs of 164 departmental libraries. Four years later the bibliographic system linked several libraries with a 240,000 records database [1]. Thus, UNAM became the only university that was able to buy a mainframe computer for its library network.

UNAM is probably the largest university in the world with nearly half a million students in various campuses around Mexico. Therefore, it also has the largest library system in the country with nearly 200 libraries whose stocks equal four million books (590,000 titles). UNAM, besides LIBRUNAM, has multiple local area

networks linked to extensive institutional computer networks and nodes to BITNET and INTERNET.

LIBRUNAM has benefitted other university libraries, because its union catalog was printed in COM (computer output microfilm) and distributed to all state universities in the 1980's. Since 1990, the LIBRUNAM catalog is sold in CD-ROM (Compact disk read only memory).

Next to UNAM library automation advances is the University of Colima's automation project. This university is small, but nonetheless, it has the best automation developments outside of Mexico City. It started developing a library management software in 1984 which has been improved to become one of the most popular microcomputer packages at the national level. The software is integral and designed for small libraries, a characteristic that has made this program popular, since most university libraries are small with collections that seldom exceed 100,000 volumes [8].

The third version of SIABUC was released in 1991 with more improvements. It included a periodicals' management module, an extensive online help system, and format records which were adapted to comply with MARC format. The software has been modified to cater to full text information retrieval. This version, called HYPERSIABUC, was used to automate the Mexican Supreme Court's Jurisprudence enacted since 1917. The database was released this year in CD-ROM [7].

Another version of this package is SIABUC-IMAGENES, that is being used at this moment to create a database of 13 museum holdings. The database will be published soon in CD-ROM.

The University of Colima has a library network of 80 workstations in five different libraries. It has in-house CD-ROM recording equipment, as well as digitalization hardware to build it's own databases and produce them for other academic and government organizations. It has published nine CD-ROM's so far [7,8].

4. AUTOMATION AT OTHER UNIVERSITY LIBRARIES

Mexican academic institutions are of three types: polytechnics, state and private universities. The first two types are government financed and receive special funding for libraries. The federal government set up a national university library program to equip and develop collections in 1985. Between 1986 and 1988 all universities received from this program two microcomputers, a printer and a modem for library use. This equipment started automation of technical services in most state university libraries. By 1990, the government had started a second phase, giving a fax machine, an optical drive and a set of CD-ROM's to all universities to improve public library services. The third phase

begun this year, providing a CD (compact disk) server and a LAN (Local area network) integrated with a server with either four, eight or twelve workstations. The number of terminals that was given was according to the size of the central library. This network hardware was meant to enable libraries to automate circulation procedures [4,7,10]. Beside this hardware, some libraries have acquired more equipment or have access to the parent organization's hardware.

TABLE 1

EVOLUTION OF MEXICAN LIBRARY AUTOMATION
-It has taken place mainly at university and special libraries -By using free software, such CDS-ISIS. -LIBRUNAM, the major national project, began operating in 1978 -MINISIS Software has been used since 1984. -Microcomputers low cost enabled libraries to start automation -Among several efforts to design software, 5 achieved success. - More than 80% of university libraries have microcomputers. -The Public Library Network has a national automated cataloguing center. -Major public libraries offer children computing lessons. -State universities have received microcomputers, a LAN, a fax, an optical disk drive, and a CD server from the federal government for library use.

According to a survey carried out by Managers of State University Library Systems (RESIBUPES) among 28 universities, all libraries are working on automation. The first area to work on has been technical services: 10 have automated more than 50% of their collections and 18 have less than 50%. Only two have computerized circulation procedures and three are about to have it ready. Therefore, public services are behind in automation in 23 of the surveyed universities [9].

A similar situation prevails among polytechnics which number to 78 institutions spread all over the country. All of them have one or more microcomputers. Just two of them have a LAN. Their automation priority is, again, technical services [6].

On the other hand, although there are no available statistics, private universities computing development is more or less on the same level with the state universities, except for the national network of ITESM (Technological Institute of Monterrey) which has 16 campuses all over the country. Two of the campuses have fully automated library services. ITESM was the first to set up a BITNET and INTERNET network. Network links are also used for library resource sharing, and satellite conferencing is used for library training (See table 1).

5. AUTOMATION IN OTHER TYPE OF LIBRARIES

Special libraries are also at the forefront of automation in Mexico. Most of them have state-of-the-art hardware. It is estimated that there are 450 units which belong to government, industry and academic research centers. MINISIS and Micro CDS-ISIS are probably the packages most in demand among these types of organizations [5]. Some of the Mexican online databases are built by special libraries. Few of the foreign produced software available in the country have been acquired by special libraries.

Public libraries form a national network of over 3,000 units managed by a national central office. They have a national cataloguing center fully automated that acquires and processes books for the whole nation. Software for this center was designed in 1982. Public libraries themselves do not have microcomputers, except for some state public libraries. However, several of them have received a set of simple microcomputers (Atari type) for children's lessons.

Libraries which are behind in all automation advances are those located in primary and secondary schools. Unfortunately, their development lags in all types of library technologies. Some exceptions are school libraries of private institutions.

6. SOFTWARE DEVELOPMENT

The major factor that fostered development in Mexico, added to the professional interest of librarians, was the cost of foreign software that was beyond most libraries' budgets. Another problem was that foreign software was in English and not marketed in the country, because microcomputer applications started in the late eighties at the time of Mexico's worst economic crisis. Therefore, the national software market was small and difficult to look after in terms of vendor support. These several factors forced libraries to experiment in developing their own computer programs or to look for free software like MINISIS/Micro CDS-ISIS [5,2]. This package enabled several libraries to start automation projects without any delay in the late 1980's (See table 2).

Some Mexican libraries are still working on designing their own software, but lack of adequate technical and financial support limit their work. As a result, about nine packages have come out but others have failed to pass the test of time. As mentioned earlier, SIABUC (1) is the package which has been expanded to be fully integrated to cater to all library functions, and it is one of the two most popular. Besides, it is free to government financed organizations. According to RESIBUPES, 14 universities out of 28 institutions use it [9]. According to Colima University, 175 organizations have received copies of the software, and, at least 80% of them use SIABUC [7].

TABLE 2

PROBLEMS THAT FOSTERED MEXICAN SOFTWARE
-International software available was not in Spanish. -Prices were beyond libraries' budgets. -There was no vendor support for foreign packages. -Micro library automation started in the rest of the world during Mexico's worst economic crisis. As a result: -Foreign software was not marketed in the country.

Next to SIABUC is LOGICAT (2), a library package developed by a consulting firm since 1983. The package has been sold to nearly a hundred libraries in Mexico as well as in other Latin American countries [5]. Eight RESIBUPES surveyed libraries use it. LIBRUNAM (3) a mainframe in-house software is limited to other libraries due to the type of hardware needed. A departmental library of UNAM also developed, in 1988, an integrated computer program tailored to special library needs called SABE (4), that a few libraries use, due to limited marketing.

A private company designed the library software for the National Cataloging Center of Public Libraries, called BIBLOS (5), which controls acquisitions and cataloging for all public libraries in the country. There is a microcomputer version that has been marketed in the country and Latin America. However, the number of users seems to be around 10.

Other integrated software that has been developed in-house is BYBLOS (6), SCCI (7), BIBLIUANL (8), and DELFOS (9). These programs were designed between 1987 and 1989 by academic institutions [5], and are used just in the libraries where the computer programs were created.

Along with the nationally produced software is the use of Micro CDS-ISIS. This free software is popular among special libraries and some university libraries. Most Mexican online databases have been implemented using this package in its minicomputer version (MINISIS) since 1984. There are 23 MINISIS users in the country [2]. According to the National Council for Science and Technology about 250 institutions have received copies CDS-ISIS, the microcomputer version of MINISIS. It is estimated that 150 of them use it (See table 3).

To sum up, the most popular software in Mexican libraries are Micro CDS-ISIS, SIABUC and LOGICAT.

7. LIMITATIONS OF LIBRARY AUTOMATION

Most Mexican libraries are processing their collections at the same

time as automating. This is a major limitation because standardization has to be implemented at all levels of organization. This problem becomes more difficult due to the reduced number of librarians of whom there are only about 1,000 at the national level [3]. However, it seems that automation is helping the country to speed up the organization of libraries. At least this has been the case of public libraries, where professional librarians are almost non-existent. The National Network of Public Libraries catalogued collections all over the Mexican territory in a matter of a few years.

TABLE 3

SOME BASIC STATISTICS
-Nine annual national conferences on library automation. -Twenty public online databases are available. -Fifteen CD-ROM's have been produced in the country. -The country has a packet-switching data transmission network. -It also has two satellites. -Most widely used Mexican made software are SIABUC and LOGICAT with 175 and 100 subscribers each. -Nearly 250 institutions have requested copies of Micro CDS-ISIS. -There are about 10 nodes to international academic networks, such as BITNET, INTERNET, and BESTNET. -Most university and special libraries have or are automating technical services. -About 20 library systems are fully automated. -Mexico has a national center for contracting access to online databases, i.e. Dialog, Pergamon, etc. since 1976.

Another automation problem is that library personnel are, in general, computer illiterate. Hardware available is still limited. Most, if not all, is in central libraries, if they are university libraries. Departmental units are still without computers, a fact which is a problem due to high decentralization of the university library systems.

Connectivity of LAN's is at an early stage. Even universities which have fully automated systems cannot communicate with each other, because the country lacks a national backbone computer network. The exception are UNAM, ITESM and UAM (Metropolitan Autonomous University) institutions that have telecommunication links and have established regional library networks.

Plans to create a backbone network have started. 25 universities received dish antennas to link their computing systems from the Ministry of Public Education. A high speed highway is being developed [8]. So, it is expected that libraries will have the telecommunication means to share their holdings in a couple of years (See table 4).

TABLE 4

PRESENT AUTOMATION PROBLEMS
-Require faster microcomputers with higher storage capacity. -Need to build local area networks, since there are just a few -University library systems have to centralize collections. -Networking of departmental university libraries is needed. - However, network connectivity at national level is nil. -The country requires an academic backbone network. -Computing skills are still limited among librarians. -Standardization has to be achieved in several activities. -Library school programs are to be updated in this subject.

8. OTHER AUTOMATION DEVELOPMENTS

Librarians have shown their interest in automation by organizing conferences and seminars. There have been nine national conferences. Some advances in the nation's telecommunications infrastructure have paved the way for libraries to have access to remote vendor databases. Since 1984, Mexico has launched two satellites, establishing a switch-packet network called TELEPAC. This network enabled libraries to have cheaper access to online information services from abroad, i.e. DIALOG. There are 20 national online databases which are accesible from any part of the country. There are about 10 nodes to international computer networks in universities, connecting them to such networks as BITNET, INTERNET and BESTNET (See table 3).

9. CONCLUSIONS

Automation advances in Mexico are still limited compared to more developed nations. Moreover, development within the country is uneven. There is a good centralized automated cataloging system for 3,047 public libraries, but still no equipment is being used at the libraries themselves. However, several of them offer children computing lessons with XT-PC's (low capacity personal computers). University libraries (950) vary in terms of their automation advances. Most of them have microcomputers, but a few are fully automated or have LAN's. 450 special libraries, in general, have computing equipment, and some of the best fully automated systems. On the other hand, most of the 554 school libraries have no access to this technology.

In a few words, automation is beginning to become widespread. Libraries with enough resources are at the forefront of information technology like their counterparts from developed countries, but they are just a few. A mid-tier of libraries has recently gained access to microcomputers. At the bottom are several libraries with no computer development.

Foreign software used in the country is limited, due to cost and language barriers, factors which fostered software development in the country. Out of several efforts of in-house systems, about nine computer packages have been fully developed. SIABUC and LOGICAT are the most popular used programs, along with Micro CDS-ISIS. This last Unesco distributed software was the first available in the country.

It is expected that university and special libraries will keep their computing leadership because of increasing government funding. However, Mexico also needs to provide greater funds to public and school libraries for automation, so that they may better fulfill their information role. If the country supports information services in an integral way, it will have a well informed society by the end of this century.

10. REFERENCES

[1] Almada-de-Ascencio, M. "Relevance of UAP in a university library system in Mexico." UJISLAA. Vol. IV, No. 1, 1982. p. 31-37.

[2] Barreto-Pastrana, E. A. "Centro de resursos MINISIS para América Latina." Memorias del V Coloquio sobre Automatización de Bibliotecas. Colima, Col., México: UAC, 1991. p. 237-249.

[3] Fernández-de-Zamora, R. M. and Peniche de Sánchez, S. "México, país de bibliotecas in bibliotecarios." Memoria de las XX Jornadas Mexicanas de Biblioteconomía. México: AMBAC, 1989. 17 p.

[4] Flores-de-Martinez, P. M. Telephone interview. Durango, Dgo., México, May 17, 1992.

[5] González Moreno, F. and Domínguez Galicia, J. Automatización de bibliotecas: sistemas disponibles en México. México: CUIB-UNAM, 1990. 145 p.

[6] Martinez, H. Personal interview. Durango, Dgo., Mexico, May 25, 1991.

[7] Rodríguez, V. and Feria, L. Telephone interview. Colima, Col., Mexico, May 20, 1991.

[8] Rodríguez, V. and Feria, L. "Acciones de la Universidad de Colima en torno al uso de las computadoras." Memorias del Quinto Coloquio sobre Automatizacion de Bibliotecas. Colima. Col., Mexico: UC, 1991.

[9] RESIBUPES. "Survey of computer hardware and software of state university libraries." A typewritten document. Zacatecaz, Zac., México, May 1992. 4 p.

[10] SEP. Different letters and circular issued by the Ministry of Public Educatipn (SEP) between 1991 and 1992.

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Joint Meeting with:

WORKSHOP THEME (IF APPLICABLE):

Adapting Technologies for Library Processing Projects: Africa, Asia, and South America

by

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Planning and administering automation projects for the Library of Congress' overseas field offices involves dealing with unique processing requirements, disparate backgrounds of host country staff, multiple alphabets and scripts, poor telecommunications infrastructure, and frequent power outages. A series of nine strategies are given which have helped implementing automation in the Library's overseas offices.

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1. INTRODUCTION TO THE LIBRARY OF CONGRESS' OVERSEAS OPERATIONS

The Library of Congress isn't just located in Washington, D.C., U.S.A.! For 30 years the Library has operated its Special Foreign Acquisitions program run from overseas field offices which provide acquisitions and cataloging services. These services are performed in offices that are very different from the Capitol Hill setting. They are currently located in Cairo, Egypt; Jakarta, Indonesia; Karachi, Pakistan; Nairobi, Kenya; New Delhi, India; and Rio de Janeiro, Brazil. The automation of these offices presents a difficult set of challenges involving telecommunications facilities, electrical power stability, hardware repair and parts inventories, and even time zones.

In the following paper, after introducing the overseas offices' operations, I want to describe the Library of Congress' progress towards the development of a consistent overseas office automation policy under these disparate conditions and requirements. I have listed a set of strategies that have emerged to help us meet our situation and which may apply to other organizations as well involved in the introduction of information technology in remote locations.

In addition to collecting materials for the Library of Congress itself, the overseas field offices also collect for participants in the program. Over time, the program evolved and is now known as the Overseas Acquisitions Program. Program participants are drawn from several major research and special libraries located in the United States and in other countries. Since 1962, the program has grown to include participants from 87 institutions in the United States and around the world. Exchange and gift materials and spot purchases made during acquisitions trips form the heart of the acquisitions process.

2. A FIRST AUTOMATION STEP IN THE OVERSEAS OFFICES: OVERSEAS DATA ENTRY

The application of computer technology to processing in the overseas field offices began in New Delhi with the introduction of the Overseas Data Entry or ODE project about 10 years ago. The purpose of ODE was two-fold: 1) to create MARC compatible machine readable data for uploading cataloging data into the mainframe computer in Washington and 2) to create printed catalog cards and proof sheets. Once uploaded in Washington the MARC records are distributed by the Library's Catalog Distribution Service (CDS) to bibliographic utilities and other institutions in the United States and around the world. ODE-produced catalog cards are included with items sent

to program participants.

ODE capitalized in large measure on the native language skills of host country staff which allows the office to analyze and provide cataloging data for use by the Library of Congress, by program participants, and, by virtue of national bibliographic networks, to libraries around the world. These cataloging data also provide the basis for publication of the South Asian Accessions List, one of five regional Lists which frequently supplement or sometimes serve as substitutes for the national bibliography in some countries.

The ODE project was an early and perhaps the first example of a system that could create MARC records and cards on a microcomputer; provide a degree of interactive data validation; and honor the full character set required by MARC as implemented by the Library of Congress. It is remarkable that the Terak microcomputers used have only 64Kb of memory. The system was designed by Library staff in Washington and New Delhi with a good deal of the programming being done by contract staff.

As successful as the ODE installation in New Delhi proved to be, it was not exported to the other five offices. Rapid changes in the world of microcomputers such as the introduction of IBM's PC employing an "open" architecture brought the DOS operating system to the fore and rendered the ODE hardware and software platforms obsolete only a couple of years after the project's attainment of production-level status in 1984. The ODE project, as excellent as it was, was therefore frozen.

3. A SECOND GENERATION OF AUTOMATION IN THE OVERSEAS OFFICES

The opportunities offered by the PC "revolution" provided the impetus to seek to automate additional functions in the offices. Cost and availability of staff around the world led us away from seeking a mainframe solution: it would have been expensive to buy and support remotely big machines and difficult to find staff to run and maintain them. The PC/DOS revolution provided a direct and immediate way to provide relatively powerful computing at low unit cost in a widely understood operating system. Thus our expansion efforts after the ODE project were based on the utilization of PC/DOS technology. Another advantage of using PCs overseas was that it became easier to provide a stable electrical environment with the use of relatively compact and widely available uninterruptable power supplies which we provide for each PC in the field. After the introduction of these UPSs data losses and equipment failure due to electrical problems were a thing of the past. These considerations lead

to our first strategy:

Strategy I: **Use of PCs and DOS and not a mainframe computer as the basis for computer development**

Shared Software Applications

It became clear that as we distributed PCs to the offices spread around the world, steps would have to be taken to introduce a degree of standardization of systems and supporting hardware. It was also evident that unless a degree of centralized control were present the solution of each office's problems would require a new set of skills to be learned. Remote trouble shooting from Washington is difficult and error prone. Time differences force Washington staff to be resourceful at 05:00 (which is just 15:30 in New Delhi or 17:00 in Jakarta–after they have gone home!) That's possible if all are using the same set of hardware, software, and applications.

Strategy II: **Standardize Hardware and Software**

Integrated Order, Accounting, and Distribution System

The next major system was also developed in the New Delhi office and was written under contract. It is known as the Integrated Order, Accounting, and Distribution system or IODA. IODA's basic task is to provide processing support for items ordered for the Library of Congress and, especially, for program participants. IODA does this by matching a participant's profile against codes for subject, country, and language assigned to the title. The assignment is usually made after a review copy has been obtained from a local dealer or acquired on a field trip. The participant profile can be very rich, having about 2,000 topical entries possible in the New Delhi profile.

After the successful introduction of IODA in the New Delhi office, it was clear that IODA would provide useful capabilities in the other offices. Moreover, the introduction of IODA in other offices would be major step forward in the implementation of strategy II, software standardization.

A meeting involving several offices was held in New Delhi to review IODA and further refine it to meet their requirements. In December 1988 version 2.0 was installed in the Cairo and Karachi offices. This marked the first time a specially developed application was running in multiple offices. Later IODA was expanded to the other

offices and is now running as version 2.23 with an additional major enhancement (IODA 2.30) expected in March of 1993.

Strategy III: Introduce Change in a Step Wise Fashion.

CD-MARC

Another big problem the offices faced was access to the whole Library of Congress' catalog. Such access would provide answers to questions such as "Has this title already been acquired?" or "What other works has this author written?" Access to the Library's bibliographic and name and series data is required to provide consistent cataloging data. In the past microfiche bibliographic and name files distributed by the Library's Cataloging Distribution Service (CDS) were the sources of these data. As effective as this microfiche product was, it nevertheless was difficult to use. Furthermore, several microform issues had to be consulted to ensure an exhaustive search had been made. This was especially true for names, where it is difficult to narrow a search by time period.

The introduction of CDS' CD-MARC product changed the picture dramatically. One major objective of this project was to provide the overseas offices with a better means of accessing bibliographic, name, and subject data. Several features required by the offices were included in its design, e.g., retrieval by country of publication or language. Complete cumulations issued quarterly means there is only a single issue to check. In addition to the efficiencies introduced by having a single cumulation, the product offers the advantages afforded by the superior retrieval capabilities of computer-based searching, such as key word. Offices report a major gain in efficiency using the product. Thus, even though the offices are geographically remote, they have immediate access to the Library of Congress catalog.

ODE, Phase II

Even though we decided not to implement the Terak-based ODE system in other offices, the concept, point-of-acquisitions cataloging, remains valid. Thus, we looked for, in essence, a "MARC record making machine" which would run on a PC (i.e., under DOS) and create correct USMARC records with local extensions required by the Library for its internal processing. Rather than developing the ODE-2 system ourselves (as was the case for the original ODE) we reviewed the marketplace and found an acceptable system. [1] The selected system offered a

good mix between online data validation (e.g., an instant alert if an operator tries to key an undefined field) and the ability to add fields as required by additions to USMARC.

Strategy IV: If at All Possible, Buy or Obtain Existing Shared Software Rather than Develop Your Software In-House

The adaptation of the selected commercial software to the requirements of ODE-2 has not been easy, but this is a consequence of using a "mass produced" product and not a custom made product and accepting some compromises. Nevertheless, ODE-2 software is now installed in all offices and being used in "start-up" mode with production slated to begin in a few weeks. This has been accomplished faster and at less cost than if the software for ODE-2 were custom made.

Strategy V: Accept a Few Compromises in Order to Use Bought/Shared Software Effectively.

Local Software Developments

Systems staff in each offices have made their own contributions and written several applications for use in their local settings. These applications supplement the functions provided by the shared or common systems such as IODA or ODE-2. Some of the offices also correspond in non-Roman scripts (e.g., Arabic or Thai) and use a variety of PC (i.e. DOS) based multi-lingual word processors.

These auxiliary applications are based on the use of dBase III or IV (and the functionally similar FoxBase/FoxPro packages); Lotus 123 for spread sheet applications; the askSam textual database management system; and the ProCite package for generation of bibliographies. These are all well supported, standardized, software packages, a tenet of Strategy II. In some offices a function, such as an in-process database, may be implemented using dBase or in others using askSam. This is to be expected, given the diverse backgrounds of staff in different offices and the relatively loose control from Washington.

Strategy VI: Encourage Independent Work in Each Office so that Highly Motivated Staff will Know they Are Making Real Contributions

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In-House and Contract Development

If an acceptable existing system can not be obtained, either as a shared system (e.g., MINISIS) or through purchase, then one enters the difficult and complex area of system development. (This was the case for IODA given the unique acquisitions requirements the offices faced in running the participant programs.) Perhaps the most difficult thing about development is deciding what is to be accomplished. There are many ways to decide but all effective ways should include:

a) Consultation with potential systems users at all levels

b) Development of a Requirements Document to refine user input and, ultimately, to act as a check list for the delivered system

Both in-house development and contracted development (by an external source, e.g., a software house, by an "NGO," or Non-Governmental Organization, or by a private contractor) require monitoring by someone other than the person responsible for developing the system. This is needed to provide the requisite checks and balances to ensure the desired system is what is actually delivered.

We have frequently found it useful to state requirements of the proposed contract in terms of "mandatory" and "desirable" features. For example:

(Mandatory) The XYZ system shall ignore diacritic marks for sorting purposes.
(Desirable) It is desirable that the XYZ system provide the capability for the user to alter the default sorting order.

Stating the requirements this way forces the debate to focus on the essentials of the system. It is, however, not an easy process and one should expect several drafts before arriving at a satisfactory version. This format also allows the library or information center to select from multiple proposals if the system is being "put out to bid." The proposal reviewers can weigh various proposals in terms of absolutely critical items and "nice-but-less-than-critical" items. A rule of thumb is that no more than half of the requirements should be in the mandatory category.

Strategy VII: Invest a Major Effort in Defining the System's Requirements with Your Potential System Users Prior to Building the System

4. SYSTEM INTEGRATION

An important concept in data processing is the principle of the non-redundancy of data. One example of this could be having the serial check-in part of a system derive its title data from the title entry defined in the cataloging part of the system. This usually implies that different system functions are integrated: otherwise, the check-in function couldn't easily or gracefully draw upon the data resources of the cataloging function. In terms of practical computer applications, functional integration implies a multi-user, interactive system, with minimal reliance on batch or off-line processing.

Functional integration adds greatly to the overall value of the system and offers major advantages:

> Users have a single, authoritative, and up-to-date place to check.
> Data is only entered once, into only one part of the system.
> Workflow becomes more efficient because users can obtain immediately needed data from any unit of the enterprise.

The Library of Congress wants to extend serials check-in, for example, more fully into the field offices, thus relieving some of the processing load from Washington. Thus, overseas field offices are now starting the process of obtaining an integrated system which would provide this functionality as well as a host of other functions. While the offices engage in several traditional library functions they also engage in several unique activities and consequently it is not expected that any "off-the-shelf" library software could offer all the required capabilities. But rather than build the system in-house we have gone to the marketplace and are now reviewing proposals from system vendors and software houses to meet this set of requirements. These proposals will probably be a mix of existing capabilities and program enhancements needed to meet the unique requirements. The strategies derived in this paper are basic to this process of obtaining the new integrated system.

Role of Standards in System Development

We are all familiar with national and international standards and indeed IFLA and the associations represented here have labored to develop a host of important standards at both levels. And these standards have been adapted by several commercial and shared systems. However, unless enterprise or in-house standards exist and are keyed to national/international standards the options for picking up and using an existing system are more limited. Further,

it is more difficult, if not impossible, to contribute to and to utilize external data resources, such as computer-based union catalogs and bibliographies. In our case, standards permit the overseas offices to create records which fit smoothly into the Washington database.

By the same measure, if various units in the enterprise are not adhering to common standards then it may be impossible to transform existing machine readable data into that required by available systems.

Strategy VIII: Adhere Rigorously to Any and All Appropriate National/International Standards

In the development of the Library's Integrated Field Office System (IFOS) we have specified the following existing and developing standards as relevant to the system:

USMARC Bibliographic, Name, and Holdings Formats

ANSI Z39.42, covering the display of serials holdings

USMARC Arabic character set so as to process extended Arabic script on RLG's RLIN system

ANSI Z39.50: Information retrieval service definition and protocol specifications for library applications.

Outline of the IFOS

In order to keep the IFOS project to manageable size it has been divided into two phases expected about a year apart. Some of the major functions required are given below.

Phase I:

Distribution of documents to participants and calculating participant costs.

Ability to search and import MARC records to create portions of order records and for catalog control purposes.

Creation of a transaction database which will support time series analysis allowing comparison of different time periods.

User defined report generation capability based on data elements from transaction log.

Non-serial item receiving and tracking.

Major Phase II features include:

Output of USMARC Bibliographic, Name, Subject, and Holdings data.

Serial and continuation receiving (Check-in).

Control of Binding and Microform handling.

The ability to process extended Arabic script is also a "highly desirable" feature.

Given the round-the-world nature of the Library of Congress' overseas field offices, we have also emphasized how well the bidders can provide software corrections and enhancements. Given also the remarkable improvements in telecommunications in several of the host cities where the overseas offices operate, it is possible that fixes and upgrades may be transmitted directly to the offices using international gateways linked to local PTT facilities. (We do not use private satellite channels given the current cost of these facilities.)

5. TECHNOLOGY COLLABORATION

The Library of Congress' overseas offices also work with host country and regional organizations in computer-based collaborative projects. Such projects, in addition to addressing the goals of the project itself, help strengthen good relations with library, scholarly, and publishing sectors in the region.

The National Bibliography of Indian Literature (NBIL) or Kesavan project is one example of such a technology collaboration. The project consists of 1) building a database of titles cited in the NBIL and 2) creating preservation microfilm of the items identified in the bibliography. The problem addressed by the project is that a multitude of important materials are decaying and will be lost. Preservation filming now can save these unique materials. The project was proposed by James H. Nye, University of Chicago, and utilizes funds from the United States -- India Fund (USIF). The New Delhi office is acting as project host site but also provided technical and administrative support at the project's inception.

The concept was straightforward and is almost a replication of Mr. Nye's highly successful preservation project for Sanskrit series run at the University of Chicago in cooperation with Harvard. The key move is to build a database to describe the items using USMARC and then to use the database as a tool to locate the items to be filmed and track their progress through the filming process. NBIL is an accepted reference source and copies exist in libraries around the world. The bibliographic area of the database is exportable as USMARC records and could

therefore be distributed to bibliographic resource databases and networks. We close with the "use whatever works" strategy:

Strategy IX: Whenever Possible, Buy, Beg, Borrow, or Adapt an Existing Application

1. The software is known as "Minaret" and is developed by Geoff Mottram at Cactus Software in Morristown N.J., USA.

IFLA GENERAL CONFERENCE NEW DELHI 1992

Division: VT

Section/RT: RTMLA

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Joint Meeting with:

WORKSHOP THEME (IF APPLICABLE):

"Librarianship: profession, semi-profession or mere occupation?: surveying the process of change and development in British librarianship today"

by
Mike Freeman.
Centre for the Study of the Professions.
Aston Business School.
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Birmingham.
U.K.

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Abstract

"Librarianship: profession, semi-profession or mere occupation?: surveying the process of change and development in British librarianship today.:

The process of professionalization as it applies to British librarianship in its evolution from occupation through semi-profession to full blown professional status is surveyed. Abbott's ideas on the "heartland of work" and "jurisdiction" in relation to librarianship are examined and some of the issues bearing upon the profession today - such as "deprofessionalisation" and "hospitality of membership" are examined. An historical overview of the "first events" in the passage of The Library Association along the professionalization continuum is given. A model of a "fusion-fission process" underlying the life cycle of professional bodies is outlined.

Mike Freeman
29 April 92

This paper will not attempt to enter into the wider debate regarding the nature of professions and the arid 'traits' and 'characteristics' argument but will try to address some of the issues in librarianship (particularly British librarianship) centred around the concepts of 'profession' and the professionalization process. The author takes the view that Wilensky (1) advances: that all occupations are placed on a continuum of professionalization, some progressing, others remaining static and yet others moving backward. This seems an eminently commonsensical and observable model, carrying within it the central concept of movement along a spectrum, whilst responding or failing to respond to societal and occupational changes.

Wilensky writes of a "cycle of professionalization" using what he calls 'First Events' as significant cumulating markers or milestones on the occupation's voyage across this continuum of professionalization. This concept of 'first events' is echoed by Reader's (2) observation that an occupation's rise to professional standing can be pretty accurately charted by reference to the progress of the relevant professional association. Abbott (3) sees the professionalization process as a natural evolutionary force, leading eventually to the Utopia of all occupational groups becoming true professions. He introduces the idea of 'jurisdiction' as the link between a profession and its work and claims, reasonably enough, that every profession aims for a "heartland of work over which it has complete, legally established control". Identifying the "heartland" of librarianship has not been too easy and establishing complete and legally established control - and thus occupational closure - has proved elusive. All does not flow smoothly in this slow movement across a continuum from occupation through semi-profession to full professional status. Pressures bear down upon these evolving groups of workers: the professions as a whole now have to grapple with such concepts as 'privatisation', 'value for money' and 'deregulation'. The agencies of appeal against and control of the professions continue to multiply (e.g. the various Ombudsmen for Banking, Local government and Insurance in the U.K) and the traditional deference and acquiescence of the general public to the authority and mysteries of the professions steadily diminishes. A growing and serious threat on the horizon is that of 'deprofessionalization'. As the bulk of professionals now work within an organisational bureaucracy (whether a Hospital or a Public Library Service) where control is usually from above and where they are merely salaried employees then elements of deprofessionalization will creep in. This leads to two groupings of loyalties: one to the profession and one to the organisation. This duality of allegiance often leads to role strain and role dissonance. Murphy (4) argues that three factors are weakening and destroying professional monopolies today. These are: (A) Information Technology providing management with powerful tools to control and standardise professionals and their work . (B) managers, professionally trained as such, are managing and controlling professionals more and more, and (C) cutbacks in resources, combined with overproduction of professionals is weakening the power of professionals in general. These points apply increasingly to librarians and do not portray a comfortable, secure future for professionals and their work.

Goode (5) remarks that "an industrialising society is a professionalizing society" - an observation of some comfort and relevance to Third World societies undergoing industrialization. But what happens when that society moves into a Post-Industrial phase? Will the demand for professionals reduce? What will happen to the image and status of the professional in such a society?

Looking historically at the origins and development of librarianship and information services (LIS) in the UK there seem to have been several significant "First Events" (to use Wilensky's phrase): key stages in the movement along the professionalization continuum. A major stimulus was the 1850 Public Libraries Act, which fuelled the rapid growth of the urban Public Library sector (the largely rural Counties had to wait until 1919 for their own founding and funding Act). with the growth of publicly funded libraries came the need for appropriate staffing. The banding together of these scattered library personnel led to the formation of The Library Association in 1877 (the American Library Association having been founded the previous year). The LA embarked rapidly upon drawing up an education and training system for library workers, complete with certification (1882), running examinations (1885), gaining a Royal Charter (i.e. State recognition) (1898) and setting up an Official Register of Librarians (1909). The Library Assistants' Association (LAA) was founded in 1895, merging with the LA in 1929 and renamed as the Association of Assistant Librarians (AAL), very much now the largest Group within the LA's internal array of Groups and Branches. Other significant players in the UK LIS arena are the Institute of Information Scientists (IIS) founded in 1958 and ASLIB (The Association of Special Libraries and Information Bureaux) founded in 1924. This latter is in many ways not a professional body: it is not a "qualifying association" certifying and overseeing practitioners but is more a loose grouping of special libraries and information units plus some personal members. The IIS, however, is more of a true professional body: validating courses, awarding qualifications and having two grades of professional membership. One of the major initiatives of the last few years has been the Saunders proposal of 1989 whereby the unification of the LA, ASLIB and the IIS into one large, comprehensive and powerful body of LIS workers - probably under a new name - was analysed and discussed exhaustively. Interestingly, this proposal echoed Abbot's (6) remark on the possibility of a "unified information jurisdiction" being formed - although he was encompassing librarianship/information science/computing/documentalism/ management information systems within his definition. Regrettably, the Saunders proposal was rejected in 1991 after many months of tortuous discussion. Perhaps Cronin's (7) provocative remark that "there is no information profession. There are information workers: a large and heterogeneous population ... a dynamic sector is best served by a deregulated educational environment" is quite perceptive and prophetic.

Nevertheless, as a generalization, the image and status of librarians has risen reasonably well over the years. the remorseless 'trading up' of entry qualifications to

librarianship has led to a virtually all-graduate profession. It would not be surprising to see this spiralling upwards process extend towards embracing the American system of a first professional qualification being a Master's in Library Studies (MLS), such is the pressure of 'academic drift'. This would turn British librarianship into a postgraduate profession with all that implies in terms of salaries, status, curricula and length of professional training. There are still some lingering doubts about whether librarianship is a 'true' profession and is, in fact, more akin to a 'semi-profession' and is still in movement along the professionalization spectrum towards the goal of full professional status. Simpson and Simpson (8) reason that the prevalence of women in a body of workers leads to a more bureaucratic internal organisation and to a semi-professional status. Goode (9) famously stated that "schoolteaching will not achieve professionalism nor will librarianship". These observations seem dated, dogmatic and certainly anti-"Equal Opportunities", but nveretheless librarianship in the UK is still a female majority occupation (73%: 1989 LA Survey) and yet the top professional posts are predominately held by men. Encouragingly, things are changing for the better, reflecting societal changes but it will be a slow and difficult process.

The major professional LIS body in the UK - The Library Association - now possesses most of the significant professional characteristics to be acquired during the professionalization process : full time occupation; university level professional education and training of some length; Royal Charter (i.e. official State recognition) ; code of conduct and an internal disciplinary mechanism; altruistic service to the community; general political and numerical dominance of the LIS sector of work. The glittering prize of State Licensing and consequent occupational closure and control continues to elude the profession, however.

Librarianship can be perceived as essentially functionalist, serving the central values of society such as education, information and culture. Arguably, librarianship can also be seen to be exhibiting monopolist tendencies today; seeking to dominate and control its sector of work, driving towards occupational closure and exclusivity. Perhaps it has always done this and only now do we fully recognise it. Major problems lie within the fact that most LIS professionals and support staff work within large and bureaucratic organisational settings and that the capacity and inclination by laymen to judge "professional competence" is increasing, thus weakening the mystique, power and exclusivity of the profession. Dundy and Wasserman (10) observe that "as the professional seeks institutional rewards, security and status he pays for them with compliance and conformity at the expense of his professional obligations". They see librarianship as marginalized and incompletely professionalized - in effect, a semi-profession.

A further issue is that of the 'uniqueness' of LIS work and whether there exists a demonstrably irreducible core of professional work - Abbott's "heartland of work" idea again. He maintains that boundaries between professional jurisdictions tend to break down in work environments (particularly in overstressed, overloaded workplaces) and the process of 'workplace assimilation' takes place. Professional tasks become diluted or deprofessionalized as a result. If a good paraprofessional or library assistant can perform as well as a mediocre professional then what implications for professional status,high salaries and professional control and jurisdiction follow? There does seem to be a squeeze occurring to a certain extent on many professional librarians : they are under threat At the top layer from non-librarian managers and IT experts and are being nibbled away at the bottom level by a growing number of non-professional LIS workers. should the professional body therefore welcome these intruders and competitors into their membership? By extending 'hospitality of membership' to all involved in LIS work (however loosely defined) does this action then dilute and dissolve the central core of librarianship and threaten the purity and integrity of the profession? Should the LA have tightened up and restricted membership further if its role, function and aspirations as a true professional body are to be maintained and developed? Or is incorporation a clever and effective method of absorbing and controlling new threats? Arguably, by grasping and promulgating the concept of 'hospitality' to all the many and diverse LIS workers in the UK (and overseas) the major professional body - and thus the profession itself - has weakened irretrievably its claim to true professional status. Roberts (11) calls this "a highly significant step in that such a policy contradicts a century of professional striving to mark out a distinct, and protected, area of technical differentiation now thought impossible to preserve". So perhaps the LA is being supremely pragmatic and realistic in its policy of 'hospitality' and indeed there may be considerable benefits of cross-fertilisation, new ideas and vigour which will accrue from such a policy. In the evolution of LIS professional bodies throughout the world this question of 'hospitality' is bound to arise, given the rate of change and the growing diversity of the information world we inhabit. MacDonald and Ritzer (12) ,in similar vein, comment that "in order to control the market the occupational body must include anyone with a reasonable claim to expertise but such inclusion brings in marginal practitioners who lower the standing of higher status members". There is an unresolved conundrum here: a conflict between exclusivity and expansibility.

Another problem arising during the professionalization process is whether the putative professional body actually reaches its goal intact, either in numbers or in its original role and function. There seems to be an interesting phenomenon linked in to the size of the body of workers itself and whether it is subject to 'limits of growth'. Drawing parallels from nuclear weapon design it becomes possible to form a model of a "fusion-fission" process operating upon the LIS profession. In the first stage, a group of disparate, scattered and numerically small workers in the LIS field are subject to external pressures or "initiators", which propel these workers into a coherent grouping with

common aims and interests, thus reaching a "critical mass" and forming a sustainable embryonic professional body. An "initiator" might well be a piece of legislation, e.g. the UK Public Libraries Act of 1850, or a threat from an unexpected sector, e.g. computing personnel. Whichever it is, the group of workers thus compressed into a tight common interest association invariably sets out along the professionalization route, acquiring the trappings and traits of a traditional professional body along the way. The fusion process continues to grow inexorably and dominance numerically and politically over the work sector is established. Then "systems disturbance" (as Abbott calls it) arises: the professional body has grown too large and unwieldy; special interest and regional groups of practitioners feel neglected and isolated; communications breakdown follows, culminating in the inevitable "fission" process. Groups of disaffected and alienated LIS workers split away and form their own miniature specialist associations and start up on the long process of professionalization again. The Irish poet, W.B.Yeats summed up the paradox neatly: "Things fall apart; the centre cannot hold". This model may seem too mechanistic and pessimistic; the life and death of a profession is perhaps not one long, sustained nuclear explosion but rather a series of stop/go manoeuvres, false trails, , reverses and sudden spasmodic leaps forward. This returns us to Wilensky's observation on the progress or otherwise along a continuum of professionalization.

In conclusion, the profession of librarianship in the UK seems now to be approaching crisis point after many years of steady development and consolidation. The arrival of the "information society" with its far-reaching developments in information storage and retrieval is forcing reappraisal and radical change upon the profession in all its aspects, and particularly upon the education and training of professional librarians to meet the information challenges of the 21st Century. A quote from the influential BLRD&D Report "Information UK 2000" (13) illuminates the probable future environment within which the future LIS professional will operate:

> "More widespread use of technology, more automation, more computer literacy amongst the population at large, greater commercial pressures to sell information products of various kinds to the public - all these factors will tend to weaken the position of the traditional librarian or information scientist "

The key word, of course, is "traditional". This plethora of information will have to be handled effectively whatever the "tools of the trade" might turn out to be in the future. Kendrick (14) sums it up neatly for all of us, and the author agrees with his essentially upbeat and optimistic view of "things to come" for the LIS profession:

> "The doomsayers who predict the dispersion and demise of the library are wrong. As knowledge continues to multiply ,the need for expertize - to collect, categorize, store, sort, retrieve and advise and comfort bewildered users - will also multiply".

REFERENCES

1: WILENSKY. H.L. (1964) "The professionalization of everyone". American Journal of Sociology. Vol LXX. No 2. Sep. 1964.

2: READER.W.J. (1966:163) "Professional Men" London: Routledge.

3: ABBOTT. A. (1988:71) "The system of professions". Chicago:university of Chicago Press.

4: MURPHY. R. (1990:71) "Proletarianization and bureaucratisation: the fall of the professional" in TORSTENDAHL. R. and BURRAGE.M eds "The formation of the professions" London: Sage.

5: GOODE. W.J. (1960:902) "Encroachment. charlatanism and the emerging professions" American Sociological Review. 25. (6).

6: ABBOTT. A (1988:65) Op cit.

7: CRONIN. B. (1988: 39) "bringing education for information workers into the 1980s", ASLIB Information. Part 16 (2). Feb 1988.

8: SIMPSON. R.L. and SIMPSON.I.H. (1969:197) "Women and bureaucracy in the semi -professions" in ETZIONI. A. ed. "The semi-professions and their organisation" New York: Free Press.

9: GOODE. W.J. (1969: 281) "The theoretical limits of professionalization" in ETZIONI.A. op. cit.

10: DUNDY.M.L. and WASSERMAN. P. (1968: 16) "Professionalism reconsidered" College and Research Libraries. 29 No 1. Jan 1968.

11: ROBERTS. N. (1991: 452) "A profession in crisis" Library Association Record. 93. (7) July 1991.

12: MacDONALD.D. and RITZER. G. (1988:258) "The sociology of the professions" Work and Occupations, 15 No 3. Aug 1988.

13: BRITISH LIBRARY RESEARCH AND DEVELOPMENT DEPARTMENT. (1990). "Information UK 2000: a Report". London: BLRD&D.

14: KENDRICK. C. (1986:127) "The University Library in the 21st Century". College and Research Libraries, March 1986.

IFLA GENERAL CONFERENCE NEW DELHI 1992

Division: MANAGEMENT AND TECHNOLOGY

Section/RT: STATISTICS

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RTMLA-2-E

Joint Meeting with: RT for MANAGEMENT OF LIBRARY ASSOCIATIONS

WORKSHOP THEME (IF APPLICABLE):

PROBABILITY, STATISTICS & LIBRARY MANAGEMENT

by

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For internal use only:

Meeting No: 126

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PROBABILITY, STATISTICS & LIBRARY MANAGEMENT

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ABSTRACT

Use of statistical methods in analysing situations for understandin the role of underlying uncertainties cannot be over-emphasized. Ex traction of relevant information from observations by exploiting suc tools introduces elements of rationality in the decision making pro cess pertaining to phenomena which are influenced by chance factors Accordingly, the dicipline of statistics assumes an important role i the management of organisations including libraries. In this paper we have tried to illustrate a few areas of applications of probabili ty modelling and statistical methodology in analysing and planning library services. Some necessary probabilistic and statistica notions have been discussed for the sake of completeness.

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I. INTRODUCTION

The scope of applications of statistical methodology is very wide and covers a varied spectrum of phenomena that demand a rational analysis of data pertaining to the phenomenon concerned so as to be able to grasp a rational understanding about the same. Natuarally then one can hardly afford to remain indifferent to possibilities of such applications whenever, in particular, one is engaged in a managerial activity that concerns an entire system or a sub-system of an entire system. The basic appeal of the discipline of statistics lies in the powerful methodology that it encompasses for analysing the past to plan for the future.

Statistical techniques play an important role in decision making in many real life situations where uncertainties occur primarily as effects of unexplained laws of Nature. Statistics as a discipline provides sound methods, based on scientific logic, for collection, analysis and interpretation of data, quantitative or qualitative, pertaining to phenomenon under study. These in turn, guide us in making an optimum (in an appropriate sense) choice of one amongst several alternative decisions in the face of uncertainty.

In the following examples which arise often in the process of offering library services, we try to raise some relevant issues which

can be adequately handled by various statistical tools which we wi touch upon in this article. Though no claim is being made in respec of the exhaustivity of the issues in the following examples, these ar expected to provide a general idea about situations where statistic can play a significant role in helping the decision maker.

EXAMPLE 1.1. A library is planning to keep an appropriat number of copies of a book *on reserve* for over-night issue only. Thes copies can be issued on *first come first served* basis for over-nigh use only. Explicitly, these copies can be issued out each day betwee 4 p.m. and 5 p.m. and are to be positively returned by 12 noon nex day. How does the library decide about the number of copies to be re quisitioned for this purpose? The difficulty lies in the fact that th demand on any given day is uncertain. To stock a copy for each pros pective user may be the safest play, but it is certainly not the mos optimal way of utilizing the available resources; on the other hand stocking too few copies of the book may be grossly inadequate to mee the objective of this service. It is, therefore, imperative that we build up a profile of daily demand of the prospective users and use the same to determine the number of copies to be stocked to meet a certain specified criteria. The methodology necessary for this purpose can be developed using statistical techniques. Obviously, one has to keep track of actual demands occurring over days. Do we really have to undertake this seemingly additional exercise every day? If not, ther

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for which days? How will an estimate of the demand profile based on a sample of days compare with the actual profile that is based on all days in the past, present and future, specially because the future is unobservable? The daily demand observed over a large number of days will basically give rise to a series of numerical figures; how do we summarise the data then so as to make some sense out of this series of figures? There may be a number of ways in which the same may be done - which method do we employ? These are just some of the issues that require to be looked into in developing an appropriate decision rule in this case.

EXAMPLE 1.2. The management of a large library would like to know how much money should be kept aside in a certain financial year for overhauling damaged books. If we assume that each damaged book would cost the same amount for overhauling, then the issue basically boils down to assessing the number of books, presumably out of a huge collection of books, that would require overhauling.

How does the management tackle the problem? Well, one way would certainly be to check through each and every book accessed in the library to decide whether it is damaged or not. What are the difficulties one is likely to confront in this method? In fact, there are quite a few. Firstly, does the library have adequate resources, viz. manpower, money, time etc. to be able to undertake the exercise of complete physical verification of each and every book it has on its stacks? In

most situations, this exercise will be hardly justified given that the amount that is required has to be perhaps only a small portion of the overall budget being planned. As such, let us think of an alternative approach: instead of a 100% verification, what happens if we check up only a sample of manageable size? But then we must be in a position to handle the various problems associated with the issue of estimating the number of damaged books which would require overhauling on the basis of our knowledge about a sample of books. Uncertainty arises because the sample may or may not depict the reality and different samples may lead to different estimates; it is possible that most of the books that wii be sample-checked would come from the lot of books that are comparatively less frequently used so that the proportion of damaged books in the sample would be substantially less than its counterpart in the population so that we would tend to under-estimate our requirements. Similarly, we may end up with an over-estimate of our requirements and in either case our planning will be unsatisfactory.

The basic issues that are involved then are as follows:

(a) How do we draw a sample from the population? (*designing the experiment*).

(b) How do we analyse the information contained in the sample and then use the same to make an inference about the population? (*statistical methodology*).

(c) How reliable is the inference? (*reliability of inference*).

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In fact, in a given situation, there may be more than one way of picking up a sample and then we must be in a position screen out the one which would suit us the best. Of course, there will be a related methodology for analysing the sample findings given a particular design of the experiment through which we obtain the data and w. should be in a position to decide on a specific design and methodolog to be used to ensure the quality of decision making..

All these aspects are matters that fall within the purview of the discipline of statistics.

EXAMPLE 1.3. Think of a library which has a separate section which accomodates all the rare collections and as such users do not have free access into the same. The requisition for a book belonging to that section is handed over at the main circulation desk. On receipt of a requisition, the clerk at the desk forwards the same to the said section. The book is issued by the main circulation desk to the concerned user upon its receipt from the said section; the requisition slip is returned to the user with a note of regret by the section in case the same is not available in the section. Th users have recently complained that the process is taking too long How should the management respond? Obviously, the service time fo each user cannot be the same so that as far as an individual user i concerened, the amount of time that would be required to complete hi

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service is uncertain. How should the management go about in forming an idea about the representative amount of time required to serve a typical user of services of this section? It may be a good idea to maintain a record of such time taken in respect of each individual user. But this may be an infeasible exercise, given the resources available to the library, especially if the number of users is too large. As such, and also because all such future requisitions are unobservable at any given point of time, one is essentially constrained to look at a few cases only. In any case, such a survey will generate a series of numerical figures each representing the time required to serve specific users. How should the data be made to be intelligible? How should the data be summarized so as to make some sense out of these apparently drab sequence of numbers? How shoould the sample information be made use of so as to make a guess about the actual state of affairs pertaining to the totality? How do we select our sample so that the sample observations can be generalised to hold true in respect of the entire population of users? Even if we are in a position to make an assessment about the general state of affairs, how much reliability should be attached to it, since after all the assessment is based on our observations in a single sample which is perhaps comprised of a small portion of the totality and the same could be quite different if we had a different sample (this refers to the 'uncertainty' part of this solution). These are some illustrative issues which *statistics* attempts to resolve in this and similar situations.

A number of the above issues would perhaps also be relevant in a situation when, say, certain library participates in an arrangement by virtue of which the requisition for a book not possessed by the library can be met by loaning the book out of a sister library (system of inter-libraries loan). Thus, after such a requisition is received, the library sends a request to a sister library for making the book available to it on loan. The book is issued to the requisitioner on its receipt from the latter, provided, of course, the same is available with it; otherwise, the library takes it up with another sister library and so on. How does the library verify on the general complaint of its users that, of late, the service time involved has become too long? All the discussions that followed the example in the previous couple of paragraphs also become essentially relevant here too.

EXAMPLE 1.4. In the above example, suppose specifically, the complain is that on the average one waits for at least 40 minutes. Or, even the complain may assert that the service time tend to be longer when clerk-A (sister library-A in the latter example) handles the requisition than when clerk-B (sister library-B in the latter example) handles the same. The management may like to pursue these complains objectively to verify if these are tenable or not. Statistical techniques can be very satisfactorily used to achieve this goal.

EXAMPLE 1.5. Consider a library counter where 'customers (users) arrive for 'service'. Our objective is to look for a policy so

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that congestions can be avoided. Congestions are likely to arise in view of irregularities in the system. In general, neither the number of arrivals is fixed on all occasions nor is the service time same for all customers - these are usually subject to chance factors. As such the rate at which the service is to be provided from the counter is usually unpredictable. In any case, whenever the rate at which the customers arrive is too high compared to the rate at which they can be served, the resultant waiting time will be high; by the same token, when the opposite is true, the services available from the counter may remain largely unutilized. This consideration may motivate us to look for suitable changes in the organization of the service facility on grounds of economy (should we increase the staff size, or should we reduce the staff size, or do we distinguish amongst the nature of service demanded etc.). But this will entail evaluation of alternatives, and that too under 'uncertainty'. Statistical methodology can be quite useful in deciding about the changes that are desirable for the system. Relevant results of the queueing theory can be quite handy in our efforts to establish arrival patterns, profile of services demanded in terms of nature, required time etc., which should help us in analysing the situations appropriately.

EXAMPLE 1.6. Suppose there is a need to plan for proper utilization of stack space in a library. Naturally, one would perhaps think in terms of moving out volumes that are not all that frequently used. As such there may be a need to relate the *age* (time since its

publication) of a book with , let us say, its annual circulation. We can make use of the available statistical methodology relating to *correlation and regression* in this regard.

EXAMPLE 1.7. For a library, suppose, it is necessary to plan necessary reinforcements in its services for the future. It may then be necessary to explore if the length of membership for the library has any role on the extent of demand on its services. Does the length of membership have got anything to do with the extent (say, High(H), Medium(M) and Low(L)) of demand for its services? If yes, does the demand tend to increase or decrease with increase in the tenure of membership? Is their any way of quantifying the extent of dependence of one criterion viz. length of membership on the level of services demanded? Many such issues can be very satisfactorily handled through statistical methods.

EXAMPLE 1.8. Consider a machine having a normal life (time to failure) of 10 years. However, it may be necessary to replace a particular component once or more, during this life span owing to failure(s). If some spares are carried in the inventory to be readily available at times of need then, in principle, it should be possible to cut down the idle time to a large extent. But, the life span of the component is not deterministic and is subject to uncertainties i.e. it cannot be predicted accurately. As such, how many spares should be carried in the inventory so as to minimize the loss expected to arise

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owing to loss of production and other related costs? More specifically, there are two conflicting costs, namely the cost of overstocking and the cost of understocking (i.e. down time, idle time cost incurred with regard to labour and costs related to emergency purchase etc.) which have to be balanced. How do we balance? Obviously, we need to know the failure profile of all such components - viz. the ones that have already been used, are currently in use and will be in use. But this population itself is not observable and is at best conceivable as such how do we propose to construct the stated profile?

The problem becomes even more complicated if we want to compare between brands of this component. How do we compare? Since the respective populations are not fully observable, obviously this has to be done on the basis of information to be obtained from samples. But then how do we draw our samples? How do we propose to generalize the findings from the sample? How reliable will be our inference, as different samples may lead us to different conclusions?

2. SOME STATISTICAL & PROBABILISTIC CONCEPTS

The basic frame which upholds statistical reasonings is provided by **probability theory**. As such, it will be appropriate to introduce certain basic probability notions at this stage. There are so much of uncertainties all around us, yet we must make decisions even occasionally at the risk of unknowingly being led into catastrophe. In such situations, it is of course nice to have access to ar

appropriate scale which would help us to describe the extent of uncertainties associated with various outcomes of different decisions.

Suppose in a statistical study, we are interested in a particular characteristic like time required to get a particular book back in the library upon recall, performance of an individual employee, annual maintenance cost of an equipment, number of defective copies produced by a copier per 1000 pages processed, lead time required in processing an order etc. The measurement of a character may vary from one unit to another; the characters which can be measured quantitatively are called **variables** while those which are measured qualitatively are known as **attributes**. For example time to failure of a machine measured in terms of the number of hours served from start till failure is a variable; the religion or caste of an employee or the type of binding (hard cover, paper back etc.) are attributes. The collection of measurements of the variable or attribute under study or all units that are relevant comprises the **population**; any part of a population is a **sample**. Thus, if the variable of interest is the annual number of books issued by a library user, and there are altogether 1500 users, then the population would comprise of 1500 numbers each of which would represent the annual number of issuances to one or the other user. This is, however, a **finite** population. But a statistical population need not always be finite; the performance of an equipment of a certain variety is an observation from the virtually infinite population comprising of measurements of performances of all

similar equipments that have already been in existence as well as those which will be in existence in the future.

Obviously, it is infeasible for a decision maker to be able to take a look at the entire population for the purpose of taking an appropriate decision in a given situation; he only has sample information at his disposal at any given point of time. Any attempt to make a decision or conclusion regarding the population on the basis of the available sample information surely introduces some elements of uncertainty in his knowledge about the population and accordingly, the quality of his decision or conclusion depends upon the extent to which information relating to the population can be extracted from the sample through scientific analyses. In a managerial situation, where a decision has to be made in the face of uncertainty, one appeals to probability theory which provides the appropriate framework for data analysis.

A random experiment is one which when performed results into one amongst few possible outcomes. Thus, observing the demand of a particular library service on a day is a random experiment the outcome of which can be one amongst a number of possible values. Generally speaking, in a random experiment, the conditions under which the same is performed cannot determine its outcome precisely. A coin when tossed twice under apparently identical conditions may lead to two different results. Thus, while the set of possible outcomes of a

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random experiment may be known, there is uncertainty about the exact outcome in a particular performance of the same. The outcome is uncertain because the factors leading to individual outcomes are either not entirely identifiable, or even if these are identifiable. these may not be achievable while performing the experiment. In other words, uncertainty in random experiments is construed as effects of a factor or group of factors about which we are ignorant or which are unobtainable.

In any case. while dealing with such experiments, one may wish to quantify the likelihood of its different possible outcomes. In this context, it is useful to know that although the outcome in a single performance of the experiment cannot be predicted beforehand. it has been analytically established that the proportion of times a particular outcome E shows up i.e. the relative frequency of E in. say, n repetitions of the experiment under identical conditions becomes more or less a constant for large values of n i.e. it does not vary appreciably *in the long run* with the number n of times the experiment is being repeated . This constant representing the *long run relative frequency of* E is referred to as the probability of the outcome E and is written as $P(E)$. Thus $P(E)$ is the proportion of times the outcome E is expected to be observed if the experiment is repeated a large number of times. Therefore, when we say that the probability of obtaining the head when a coin is tossed once only is 0.5, we mean that if the coin is tossed a large number of times, then 50% of these

tosses are expected to yield heads. Of course, we hasten to add at this stage that, this in no way implies that in 100 tosses of this coin, there must be 50 heads and therefore 50 tails. Similarly, when we say that the probability for the daily demand of a particular book on reserve to be 5 is .01, we mean that out of a large number of days, only on 1% of the days the demand is expected to be 5.

How does one determine the probability of a particular outcome in a given situation? In some cases, probabilities of the different outcomes can be determined from theoretical considerations e.g. say, symmetry. Thus, for example, in the coin tossing experiment, if there is apparently no reason to expect the 'head' in preference to 'tail', then in a large number of tosses, by symmetry, one would expect 'head' to appear exactly half the time, so that $\mathcal{P}$(Head) = 0.5 and hence $\mathcal{P}$(Tail) = 0.5.

In fact, the above argument can be extended to conclude that in case of experiments having a finite number of, say k, outcomes none of which can be expected in preference to the rest (i.e. the k outcomes are equally likely), each outcome has probability $(\frac{1}{k})$. Further, suppose, we are interested in computing the probability of a particular happening i.e. event which is accomplished if the experiment results into any one of, say, r outcomes; a little reflection (recall that the probability of <u>an</u> outcome is its 'long term' relative frequency) will confirm that the required probability is $(\frac{r}{k})$. Thus,

for example. the probability of obtaining a defective copy of a book from a lot of copies of which a proportion π are defective is π. However, theoretical deduction of probabilities of various events relating to a large number of experiments having innumerable outcomes is not always possible and in such cases, these have to be analytically suggested and then confirmed through statistical techniques.

The basic idea behind the concept of probabilities of events is not difficult to comprehend. Think of a finite population or universe (i.e, the totality of all conceivable measurements in a given context) like all the 100000 bound volumes in a library. The experiment is to select a volume 'at random' at a time and classify the same as *damaged* or *not damaged*. If we keep on repeating this experiment. then ultimately. the population being finite. we will exhaust all the 100000 volumes and hence the proportion of damaged volumes in n repetitions (i.e. n sample observations) eventually equals the proportion of damaged volumes possessed by the library. Even in the case where the population is so large that it cannot be exhausted through repeated experimentation. such a phenomenon should intuitively hold and this has been analytically verified to be so.

It should by now be clear that a sample observation is generated by repeating the relevant experimentation once and through repetitions under identical conditions, one actually approaches the population of all possible measurements on the variable under study. In this sense,

therefore, $P(E)$ can be interpreted to be the 'relative frequency' of E in the population.

The reader may already be familiar with the concept of a **frequency distribution** which is a tabular arrangement for displaying the relative frequencies (or simply the frequencies) corresponding to different values or categories of values pertaining to the phenomenon under study. Similarly, a **probability distribution** is a description of probabilities of values or classes of values pertaining to the phenomenon under study.

EXAMPLE 2.1. Continuing on Example 1.1, suppose that the probability distribution of the daily demand for the particular book is as follows:

Daily demand:	0	1	2	3	4	5	6	7	8
Probability:	.05	.15	.22	.23	.17	.10	.05	.02	.01

As per the above table, the probability for the daily demand would be, say, 2 is 0.22; this simply means that if the demand is observed over a large number of days, then on 22% days it is expected to be 2. Also note that the sum total of the above probabilities is 1.0 so that the probability for the demand to be 9 or more is zero i.e. the demand can never be a number more than 8.

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EXAMPLE 2.2.(Binomial Distribution). Suppose that the authorities estimate that of all the requisitions, a fraction π relates to publications dated as far back as 25 years or more. Thus the probability that a requisition will concern such an old publication is π. What is the probability that out of a total number of n requisitions on a day the number of requisitions for old books will be 0 or 1 or 2 or... or n?

To fix ideas, take the case $n = 2$. Think of a large number N such days each registering only two requisitions. Out of first (say, in order of arrival of the requisitions) N requisitions, $N\pi$ are expected to be concerning old books and $N(1-\pi)$ are expected to be for newer books. Thus, on $N\pi$ days , the first requisition received involved old books; out of these $N\pi$ days, on $(N\pi)\pi$ days the second requisitions are again expected to be for the old books and on the remaining $(N\pi)(1-\pi)$ days, the same are expected to concern newer books. Again, out of the $N(1-\pi)$ days on each of which the first requisitions concerned newer books, on $N(1-\pi)\pi$ days, the second requisitions are expected to concern old books and hence on $N(1-\pi)(1-\pi)$ days, the second requisitions also are expected to involve newer books. Thus, out of N days each registering two requisitions only, on $N\pi^2$ days, both the requisitions are expected to involve old books, on $2N\pi(1-\pi)$ days exactly one requisition is expected to concern an old book and hence the remaining requisition is expected to concern a newer book and finally, on $N(1-\pi)^2$ days both requisitions received concerned newer

books only. Hence, the proportion of days on which both the requisitions are expected to concern old books is $N\pi^2/N = \pi^2$; proceeding this way and recalling that the probability of an outcome is the proportion of times the outcome materilizes in a large number of repetitions of the experiment, we have the following probability distribution:

No. of requisitions for old books	0	1	2
Probability	$(1-\pi)^2$	$2\pi(1-\pi)$	π^2.

Note that the above probabilities are the successive terms of the expansion of $(\bar{\pi}+\pi)^2$, where, $\bar{\pi} = 1-\pi$.

Extending the above arguments, we find that if on a day, there are n requisitions, then the probability that the number of requisitions which involve old books is 0, 1, 2, ..., n are as follows:

No. of requisitions for old books	0	1 ..... r	n
Probability	$(1-\pi)^n$	$n(1-\pi)^{n-1}\pi$ ... ${}^nC_r(1-\pi)^{n-r}\pi^r$	π^n.

where ${}^nC_r = \dfrac{n(n-1)(n-2).....(n-r+1)}{r(r-1)(r-2).....3.2.1}$.

Note that the above probabilities are the successive terms of the

binomial expansion of $(\bar{\pi}+\pi)^n$ and hence such a distribution o probabilities is known as a binomial distribution. Observe that th situation described above resembles that of n tosses of a coin whic falls head with probability π or of a single simulteneous toss of such coins; in either of these cases, the variable in which one woul be interested is the total number of heads (like total number o requisitions in favour of old books).

EXAMPLE 2.2. (Poisson Distribution) Suppose, patrons arriv at a service counter in library in such a manner that the chance o an arrival in small intervals of time is proportional to respectiv lengths of such intervals, more than one arrival over such interval are *significantly* small and the arrivals are in some sense not interrelated, then the number of arrivals per hour (or half an hour or per day or any other significant length of time, as the case ma be), which cannot be predicted beforehand, is a *random* variable whos probability distribution is given by the mathematical formula:

$$\mathcal{P}(\text{No. of arrivals is } r) = \frac{e^{-\lambda}\,\lambda^r}{r!}, \quad r = 0, 1, 2, \ldots\ldots$$

where e is a number which is approximately equal to 2.73 and λ is the average number of arrivals per unit time which is one hour in this particular instance.

It can be further proved that in such a situation, the successive arrivals take place with an average interval of $(\frac{1}{\lambda})$ hours between

them and the probability that the time between two successive arrivals exceeds, say, x hours is $e^{-\frac{x}{\lambda}}$. This phenomenon is described by saying that the time between two successive arrivals is exponentially distributed.

The distributions that we have discussed in Example 2.1, 2.2 and 2.3 (excepting the one discussed in the last paragraph) are called discrete distributions since they correspond to measurements (like number of requisitions for old books, hourly number of arrivals etc.) which adopt one amongst a set of values that are discrete. On the other hand, measurements like height, weight, distance, time etc. are *continuous* in nature, i.e. theoretically, these can be measured on a continuous scale. It is only becuase of non-availability of proper measuring instruments that such measurements are reduced to be discrete. As is already known, a frequency distribution corresponding to any such measurement can be diagrammatically represented by a **histogram**; a histogram is a diagram which comprises of adjacent rectangular bars constructed over adjacent intervals of values of the variable under study such that the area of a particular rectangle is equal to the frequency of the interval on which it stands. However, if we have a large number of observations (through a large number of repetitions of the underlying random experiment) relating to such a measurement and the class intervals are made sufficiently small, then the outline of the corresponding histogram would look almost like a smooth curve. Also, since the experiment has been repeated a large

number of times to produce this smooth curve. the area under the same over any interval can be interpreted to be the probability that an observation will fall between the two end points.

We have already come across the exponential distribution which is one such distribution. The most important such distribution seems to be the normal distribution of measurements having average μ and variance (scatter around mean) σ^2 [*for the definitions of average and variance, see the last para of this section*] as described by the curve

$$f(x)= \frac{1}{\sigma\sqrt{2\pi}} \; e^{-\left(\frac{(x-\mu)}{\sigma}\right)^2}, \quad -\infty < x < \infty. \qquad (2.1)$$

Note that the above function when graphed will lead to a diagram in which the portion lying to the left of the axis $x=\mu$ is the mirror image of the portion lying to the right of the same axis. The area under the above curve between any two points c and d for a given pair of values of μ and σ is the probability that an observation picked up randomly from a population having average μ and variance σ^2 will lie between c and d. Such probabilities for various combinations of values of μ and σ can be easily computed using statistical tables.

Under what circumstances, such a distribution is likely to be of use? This question has been very comprehensively answered by what is known as the Central Limit Theorem. In fact, the probability distribution of a measurement which is subjected to influences of a

large number of independent factors can be adequately modelled by a suitable normal distribution. As asserted in the Central Limit Theorem the probability that the sample mean, based on n independent observations drawn randomly from a population having mean μ and variance σ^2, exceeds any given number x is approximately equal to the area under the normal curve (2.1) above with, of course, σ replaces by $\sigma/\sqrt{n}$. between x and $+\infty$.

We conclude this section by formally defining the concepts of mean and variance. Consider a population consisting of N measurements Suppose that the distinct measurements are known as $x_1, x_2, \ldots, x_k$ there are altogether N_1 x_1's, N_2 x_2's,..., N_k x_k's so that $N_1 + N_2 + \ldots + N_k = N$. The average μ and variance σ^2 of these values or alternately of the population consisting of these values are defined as

$$\mu = \frac{N_1 x_1 + N_2 x_2 + \ldots + N_k x_k}{N} = p_1 x_1 + p_2 x_2 + \ldots + p_k x_k;$$

$$\sigma^2 = \frac{(x_1-\mu)^2 N_1 + (x_2-\mu)^2 N_2 + \ldots + (x_k-\mu)^2}{N}$$
$$= p_1 (x_1-\mu)^2 + p_2 (x_2-\mu)^2 + \ldots + p_k (x_k-\mu)^2.$$

Notice that p_i is the probability that a randomly picked up measurement from the population equals x_i. As is well-known, the average μ represents the magnitude of the measurements while the variance σ^2 gives an idea of the extent of scatter of the measurements on either

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side of the average. A small value for σ would indicate that the measurements in the population are tightly scattered around μ while a relatively large value for σ would mean that the measurements are widely dispersed around μ. Both μ and σ thus present a summary of the measurements. These provide useful information regarding the behaviour of the random phenomenon under consideration in the absence of complete knowledge about the relevant probability distribution. For example, the probability that a randomly chosen measurement lies between the limits $\mu-\varepsilon$ and $\mu+\varepsilon$ cannot be smaller than σ^2/ε^2, where ε is any specified margin. This probability can be easily computed if the relevant probability distribution is completely known; otherwise, the above fact (which is known as the Chebyshev's Inequality) can be of guidance, given that μ and σ are known.

3. ILLUSTRATIVE APPLICATIONS OF STATISTICAL AND PROBABILISTIC CONCEPTS

In this section, we propose to illustratively discuss applications of statistical methods and probabilistic models in tackling some of the situations posed in the examples discussed in the previous sections.

EXAMPLE 3.1. Let us refer to Example 1.1. and its continuation in Example 2.1. Suppose, it is decided that only two copies of the

book will be kept in reserve. On a given day, the demand cannot be met in case the demand on that particular day exceeds 2, the probability for which is equal to 0.58 (0.23+0.17+0.10+0.05+0.02+0.01). so that with a stock of 2 copies on reserve. the demand cannot be met on 58% days. On the other hand, if 5 copies are stocked for this purpose, the demand cannot be met only on 8% of the days.

Supposing that only 5 copies of the book is available on reserve the probability that on a given day, the demand cannot be met is 0.08 One can now use the binomial distribution with $n = 0.08$ to calculate probabilities that out of n days, the stock out will occur on at most r days, for $r = 0,1,2,\ldots, n$. For example, if $n = 90$ (the length of a quarter in a school year), then the probability that the stock out will take place on at most, say, 4 days is 0.15 approximately. Similarly, the same probability can be computed for various combination of values of n , r for Policy-s of stocking s copies. These should help in deciding the actual policy that the library would like to pursue depending upon its requirements.

Using the formulae given at the end of the last section and appealing to the long term relative frequency concept of probability we calculate that the average number of demands per day is 2.98 ($\cong$ 3) and variance of the daily demand is 2.8596. If we did not know the detailed probability distribution excepting for these two summary measures, we could make use of the Chebyshev's Inequality to claim

that the probability that the demand would exceed 5 is at most 0.41 (in fact, this probability when computed from the given probability distribution is only 0.08). As in this particular example, this benchmark value for the required probability is way above the actual value of 0.08. An alternative approach would be to try to estimate the entire probability distribution. For this purpose, one may consider a random sample of say n days and obtain the frequency distribution of daily demand as follows:

Demand	0	1	2	3	4....
No of days	n_0	n_1	n_2	n_3	n_4...

The probability of the daily demand being r is then estimated by $\frac{n_r}{n}$, $r = 0, 1, 2.....$. It can be theoretically proved that these estimate the corresponding probabilities quite closely, provided the size of the sample is reasonably large, viz. 25 or more.

EXAMPLE 3.2. When a patron is looking for a particular book, then one of the two things may happen: either he locates the book in the shelf ready to be borrowed or, the book may already be in circulation and he files a demand for the book. In the jargons of queuing theory, in the first instance, his service starts immediately while in the latter instance, he joins a queue and awaits his turn for the service to begin since his 'arrival' has taken place during the 'service time' of the previous 'customer'. As such, the relevant

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results of queuing theory can be made use of to analyse, for instance the average number of patrons waiting in the queue, the average number of copies in circulation, expected demand rate, average duration of time a copy is retained by a borrower, average duration of waiting after putting in a demand for a copy, etc.

EXAMPLE 3.3. Suppose, it is necessary to estimate the number of books that have been lost from a certain library. Let us assume that as per register, the library should have N number of books. Whenever N is large, the task of physically ascertaining the number that have been lost can be expensive both in terms of time and money. Hence alternately one would be interested in estimating the same. There are many modes of sampling; we consider the estimation process based on random sampling. Looking at the main accession register, we select n books through a process of lottery (random sampling) and physically verify how many of these are lost; let a proportion π_n of these belong to this category. This is taken as an estimate of the fraction π that have been lost out of the totality of N books; note that π can be interpreted as the probability that a randomly selected title has been lost. In any case, then a reasonable estimate for the number of books that have been lost is $N\pi_n$. The motivation for estimating π by π_n as defined above lies in the theoretical fact that repeated selection of books ultimately exhausts the entire set of N books in which eventuality $n = N$, so that then $\pi_n = \pi$. Obviously, the value of π_n depends on the particular sample of books that gets selected through the random

mechanism that is followed. For example, suppose, the library has 10 books of which actually 3 have been lost; of course, the latter fact is not known *a priori*. Now, if decide to take $n = 2$, and $\pi_n = 0$ or 0.5 or 1.00 according as the two books selected at random are amongst the 7 that have not been lost, or exactly one of the two books chosen is amongst the three that have been lost, or both the books chosen are amongst the three books that have been lost. This observation helps us to visualize that π_n is basically values assumed by a random phenomenon. An application of the Central Limit Theorem establishes that the degree of consistency of the estimator π_n at any preassigned error margin $\varepsilon>0$, i.e. the probability that the error of estimation exceeds any given margin ε is approximately equal to the area under the normal curve (2.1) between the points $-\varepsilon_n =:-\varepsilon(\sqrt{n})(\sqrt{\pi(1-\pi)})^{-1}$ and $\varepsilon_n = \varepsilon(\sqrt{n})(\sqrt{\pi(1-\pi)})^{-1}$ irrespective of the true value of π; natuarally, then with increasing sample size n, this area under (2.1) over the interval $(-\varepsilon_n, \varepsilon_n)$ expands to 1. As such, whenever the sample size n is large then π_n is expected to be close to the true value π.

It may be added here that like proportions, as an estimate of the population average, the sample mean based on a random sample drawn from the population is also quite reliable, provided, of course, the size n of the sample is reasonably large.

EXAMPLE 3.4 Let us refer to Example 1.4; we intend to statistically verify whether the allegation (hypothesis) that clerk-A

takes more time compared to clerk-B to serve a customer is tenable or not, before really proceeding to take action against clerk-A on the basis of the complain. Understandably, this comparison will have to be made on the basis of the population average handling times of the two clerks; however, precisely these are the quantities which are not known. As such, based on the data supplied by a random sample of n patrons, the (sample) average $\bar{x}$ of their handling times is computed; similarly, the (sample) average $\bar{y}$ of their handling times is also computed. Since, $\bar{x}$ and $\bar{y}$ are expected to be close estimates of their corresponding population counterparts which are not known, performances of the two clerks will have to be made on the basis of the magnitude of the difference $(\bar{y}-\bar{x})$. Given a level of reliability for the conclusion which has to be made on the basis of random findings described above, the criticality of the magnitude of the difference can be judged with help of statistical tables.

EXAMPLE 3.5 Let us refer to Example 1.7; here, we wish to decide if the extent of demand (High(H), Medium(M) or Low(L)) is in anyway influenced by the length of membership; suppose that patrons are classified into three groups depending on the length of their membership as follows:

Group A: Length of membership ≤5 years;

Group B: Length of membership between 5 and 10;

Group C: Length of membership >10 years.

Let p_{AH} be the probability that a randomly chosen patron happens to be a Group-A member in terms of his tenure as a member in the library and also, he is amongst those who put high demands on the library services; p_{AM}, p_{AL}, p_{BH}, p_{BM}, p_{BL}, p_{CH}, p_{CM} and p_{CL} have similar probabilistic connotations. Suppose, that the total membership is N; naturally then $N = N_H + N_M + N_L$ and, also $N = N_A + N_B + N_C$ where N along with the appropriate suffix would indicate the number of members belonging to the appropriate category either in terms of the length of membership or in terms of the extent of demand placed on the library services. Similarly, N with a double subscript will indicate the number of patrons with dual classification; thus, for example N_{CM} is the number of members who not only are members for more than the past 10 years but also place medium demands on the library services. Thus, $p_{AH} = N_{AH}/N$. If the extent of use of library facilities is independent i.e. independent of the tenure of membership, then the N_A members of Group-A will be distributed in classes H, M and L in the same proportion as N members are distributed in these classes, i.e., $N_{AH}/N_A = N_H/N$. As such, whenever, the extent of services demanded is independent of the length of membership, then $p_{AH} = (N_{AH}/N) = N_A(N_H/N)/N = (N_A/N)(N_H/N) = p_A\, p_H$; similarly, under the assumption of independence of the two criteria, *viz. length of membership* and the *extent of services demanded* $p_{AM} = p_A\, p_M$, $p_{AL} = p_A\, p_L$, $p_{BH} = p_B p_H$, etc. Thus, independence could be established if we could check out all 9 such equalities. But this is not feasible, since these probabilities are typically not known. As such, we take a random sample of n patrons and classify them in terms

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of both the criterion. Now, n_A, n_{AH}, etc. will have the same connotations as N_A, N_{AH}, respectively, excepting that the lower hand n's relate to the random sample and not the population. In fact, the data derived from the sample can be organized as in the following table:

		Extent of Services Demanded			Total
		H	M	L	
Length of Membership	A	n_{AH}	n_{AM}	n_{AL}	n_A
	B	n_{BH}	n_{BM}	n_{BL}	n_B
	C	n_{CH}	n_{CM}	n_{CL}	n_C
Total		n_H	n_M	n_L	n

Following the arguments as in Example 3.3, p's can be estimated b the corresponding sample proporions; thus, e.g. p_{AH} can be estimated by n_{AH}/n, p_A can be estimated by n_A/n, etc. and as such, under the hypothesis of independence of the two criteria, then the expecte number of patrons who belong to group-A in terms of tenure of membership and also to the category-H in terms of the intensity of his use of library services should be $n(n_A/n)(n_H/n)$; the expected number o members belonging to the other 8 combinations of categories can be similarly computed. The correspondence of these expected numbers and the corresponding observed number of members falling in the different

combinations of levels of the two criteria can be worked out in the form of what is known as a (contingency) chi-square which is a number that measures the distance between the expected and observed cell frequencies; this distance is computed by summing $(f_{e(i,j)} - f_{o(i,j)})^2 / f_{e(i,j)}$ over all cells, where $f_{e(i,j)}$ and $f_{o(i,j)}$ are the expected and observed frequencies of the (i,j)-th cell in the above table. Obviously, if this distance is significantly large, then we would doubt the hypothesis of independence between the two criteria. Given a level of reliability for the conclusion which has to be made on the basis of random findings described above, the criticality of the magnitude of the above distance can be judged with help of statistical tables.

EXAMPLE 3.6(Regression) We refer to Example 1.6. One of the major objectives of many investigations is to make predictions. For instance, it may be necessary to predict the number of circulations of a publication based on its *age*. In order to be able to make such predictions, we try to establish an algebraic relationship connecting the two measurements viz the number of circulations in a year (*dependent variable*) and the age (*independent variable*) of the publication . Consider the following data:

Age of book (x):	3	7	2	1	8	10	2	5	13	9
Circulations (y): (last year)	40	31	43	48	23	22	47	33	8	23

Plotting these 10 pairs of poits viz. (3, 40), (7, 31)..., (9, 23) on

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graph paper, we get a *scatter diagram* which gives us a fairly good ide of the nature of dependence of y on x. In fact, here we observe tha all the points seem to be lying more or less on a straight line, s that the relationship between x and y can be taken to be approximate linear. However, as will be evident from the scatter diagram, ma straight lines can be drawn which would approximate the exa relationship between x and y. The problem, therefore, is to deci which of these would provide the best results. This is resolved usin what is known as the method of least squares. The least squar principle considers that line which minimizes the total (squared) err that would be committed as the one providing the best fit to th scatter. That is, we position the line so as to minimize the sum o squares of vertical distances of the given points in the scatt diagram from the line. The logic of the least squares principle shou thus be geometrically clear.

When the above principle is made use of, we come up with th following prediction equation in the present situation:

$$y = 48.60 - 2.80x,$$

Thus, a book which was published 7 years ago, is expected to b circulated approximately 29 times, on the average. These computation can be carried out with help of standard packages.

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IFLA GENERAL CONFERENCE NEW DELHI 1992

Division: MANAGEMENT AND TECHNOLOGY

Section/RT: STATISTIC

90- UN-4 / STAT-2 (WS)-F

Joint Meeting with: UNIVERSITY LIBRARIES

WORKSHOP THEME (IF APPLICABLE):

PERFORMANCE MEASUREMENT IN ACADEMIC LIBRARIES

La mesure de la satisfaction des usagers : statistiques et enquêtes auprés du public

par

Marie-Dominique Heusse

Bibliothèque interuniversitaire de Toulouse, France

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Workshop paper

Les enquêtes auprès du public se sont multipliées dans les bibliothèques universitaires françaises depuis le milieu des années 1980. A l'origine de ce développement, on trouve une insatisfaction devant l'intérêt limité des données purement statistiques recueillies annuellement pour l'ESGBU (enquête statistique générale auprès des bibliothèques universitaires, établie à la requête du Ministère français de l'Education nationale), qui n'offre qu'une mesure partielle de l'activité et ne comporte aucun indicateur pour l'appréciation de la satisfaction du public. Il y avait aussi le désir de vérifier des impressions ou observations éparses sur le comportement et les attitudes du public par une analyse plus méthodique.

Sur un plan plus large, d'autres raisons président à ce souci accru d'évaluation : l'augmentation significative des moyens des bibliothèques universitaires à partir de 1988 (triplement de la subvention de l'Etat) les a fait passer d'un comportement de repli et de défense, liée à la pénurie, à une attitude plus prospective, orientée vers le développement des services et l'amélioration de la qualité. Enfin, il faut évoquer une transformation importante du paysage universitaire français : l'accroissement continu du nombre d'étudiants s'accompagne d'une modification de leur recrutement, provoquée par la demande de catégories sociales qui n'avaient pas jusqu'à présent accès à l'Université. Ce mouvement qui paraît profond, lié au besoin d'élévation des qualifications exprimé par les entreprises se mesure aussi dans le comportement de masses plus hétérogènes d'étudiants face à la culture et à l'information, dans leurs pratiques de lecture, leur usage et leur approche de la documentation, leur "savoir s'informer". Pour proposer des services adaptés, voire parfois des formations spécifiques à l'utilisation des bibliothèques, il faut commencer par bien connaître les pratiques et les attentes de ce public.

Les enquêtes auprès du public

Un sondage fait en 1990 auprès des 70 bibliothèques universitaires ou interuniversitaires françaises a montré qu'un tiers d'entre elles avaient réalisé des enquêtes globales pour mesurer la composition et la satisfaction de leur public.

Bien qu'elles procèdent d'initiatives isolées d'établissements pour analyser leur propre public sauf dans un seul cas, sur lequel nous reviendrons plus loin, ces enquêtes présentent un certain nombre de caractéristiques communes, ou assez voisines :

1 - elles sont globales, c'est-à-dire qu'elles essaient de prendre en compte d'une part toutes les catégories de public qui fréquentent la bibliothèque, d'autre part

l'attitude de ce public face à l'ensemble des activités et des services proposés. Cette volonté de ne pas segmenter l'étude correspond pour une part à un souci d'efficacité et de "rentabilité" de la démarche d'enquête, et aussi au désir d'obtenir une photographie très exacte de la totalité du public. Cependant, elle a montré ses limites dans un certain nombre de cas : ainsi les enseignants universitaires, qui représentent pourtant un public très intéressant à analyser, se sont mal laissé appréhender au travers de questionnaires construits en priorité pour les étudiants ; il a même semblé que cette formule de questionnaire était peu adaptée à l'étude du comportement des enseignants et qu'il valait mieux privilégier à leur égard la technique de l'entretien individuel, plus souple et plus personnalisée. D'autre part, s'agissant des services de la bibliothèque, certains services spécialisés comme le prêt entre bibliothèques ou l'interrogation de banques de données informatisées sont connus et utilisés par une faible partie des étudiants : malgré les techniques de tris croisés utilisées lors du dépouillement des questionnaires, les occurences de réponse concernant ces services étaient souvent trop faibles pour que l'analyse en soit réellement fructueuse.

En 1988, une enquête a poussé plus loin encore cet objectif de mesure globale de la composition et du comportement du public : le cadre de l'étude était cette fois l'ensemble du public universitaire dans les disciplines de Lettres et Sciences humaines de toutes les universités de Paris, grâce à questionnaire unique posé en même temps dans dix bibliothèques de la région (1). Outre l'intérêt de l'analyse pour chacun des établissements engagés dans ce projet, cette enquête a permis de mettre en évidence des pratiques multiples (fréquentation de plusieurs bibliothèques) et de mesurer les flux croisés d'étudiants entre les différents établissements.

2 - Elles ont été élaborées et conduites selon une méthodologie relativement homogène, en partie sans doute parce que les mêmes interrogations ont conduit à des solutions voisines, en partie aussi parce qu'il y a eu, grâce aux associations professionnelles ou de façon plus informelle, des échanges d'information sur les enquêtes réalisées et une circulation de plusieurs questionnaires. L'enquête de 1988 sur les dix bibliothèques parisiennes a fortement contribué, elle aussi, à codifier cette méthodologie :

2 -1 L'association avec un universitaire ou une équipe de chercheurs a été souvent pratiquée. Parfois même, le projet d'enquête de la bibliothèque rencontre en écho l'initiative d'un universitaire qui trouve là le thème d'un travail personnel de recherche (2). Il conduit alors, généralement, la démarche de bout en bout. Dans les autres cas, il s'agit de mettre à profit des compétences complémentaires de celles des bibliothécaires soit pour élaborer le questionnaire lui-même, soit pour mettre au point la méthode de l'enquête :

échantillonnage, dépouillement, exploitation, etc. Les universitaires ainsi associés aux différents projets d'enquête relèvent de disciplines différentes : sociologie, économétrie, marketing notamment.

Une variante de l'association avec une équipe universitaire est le recours à une Junior entreprise : il s'agit d'associations d'étudiants, en général de 2ème et de 3ème cycle, qui ont pour objectif la réalisation d'études très diverses pour le compte d'entreprises ou de collectivités, moyennant une rémunération sensiblement inférieure aux tarifs pratiqués par les sociétés de service. L'intérêt de ce système est que la Junior entreprise prend en charge l'intégralité du processus d'enquête, depuis, l'étude préalable et l'élaboration du questionnaire jusqu'au dépouillement et l'analyse des résultats en passant par la pose des questionnnaires. L'inconvénient relatif, outre le prix de revient plus élevé que lorsque la bibliothèque réalise elle-même l'enquête au moins partiellement, est la connaissance rapide et parfois superficielle que les chargés d'étude et les enquêteurs ont du monde des bibliothèques...

2 -2 Les questionnaires sont, le plus souvent, posés oralement aux étudiants par des enquêteurs n'appartenant pas au personnel de la bibliothèque. Plus lourde et plus difficile à organiser (il faut recruter les enquêteurs, les former, les contrôler) cette méthode offre de nombreux avantages : elle garantit que sera rempli le nombre de questionnaires désiré, elle permet de réaliser des échantillonnages, elle permet aussi d'expliciter le questionnaire et d'éviter des fausses réponses à des questions mal comprises. Les autres solutions : questionnaire proposé par écrit à l'intérieur de la bibliothèque, sous le contrôle ou non du personnel, ou envoyé par courrier, ont des taux de non réponse très élevés, et n'offrent pas les possibilités indiquées plus haut. La pose du questionnaire par du personnel de la bibliothèque présente d'autres inconvénients : créer un problème de disponibilité pour les autres activités normales, si l'effectif de la bibliothèque n'est pas très important, et d'autre part risquer de restreindre la liberté de réponse des étudiants à certaines questions.

2 -3 La question de l'échantillon a été traitée de deux façons différentes : dans beaucoup d'enquêtes, aucune détermination préalable d'un échantillonnage n'a été effectuée, les étudiants étant questionnés au hasard, ou de manière aléatoire (un étudiant sur dix sortant de la bibliothèque, par exemple). Ce n'est qu'au moment de l'exploitation des résultats que la composition du public issu des questionnaires est croisée avec les autres données statistiques produites par ailleurs par l'université et par la bibliothèque. Cette méthode permet par exemple de calculer le nombre total d'étudiants qui fréquentent la bibliothèque, lorsque celle-ci ne contrôle pas les entrées, en posant une question sur l'inscription au système de prêt - le nombre des inscrits étant connu par ailleurs.

Dans certains cas, cependant, l' analyse de catégories bien précises d'utilisateurs doit être faite même si elles ont une importance numérique faible. Dans ces cas là, la réalisation préalable d'un échantillonnage est nécessaire, avec détermination précise des catégories à interroger. La méthode du panel est également à retenir lorsque la bibliothèque dispose de données exactes sur la composition de son public global : c'est le cas de la bibliothèque Sainte Geneviève à Paris qui, ayant mis en place un système de contrôle d'accès couplé au logiciel d'inscription des lecteurs, connaît ceux-ci avec une très grande précision. L'échantillon retenu pour l'enquête peut alors être un reflet parfait des catégories du public total.

2 -4 L'expérience du dépouillement manuel d'une enquête est suffisamment éprouvante pour que, dans presque tous les cas, la solution du dépouillement informatique ait été retenue. Cette pratique a une contrepartie contraignante : la nécessité d'élaborer des questionnaires comportant le maximum de "questions fermées" (réponse par oui ou par non à des réponses types proposées par l'enquêteur), la saisie informatique des réponses à des questions ouvertes étant quasi impossible.

Il faut citer une expérience originale à cet égard, celle de la bibliothèque de l'Université de Nice en 1987 (3) où l'enquête a été directement réalisée au moyen de Minitels (4) connectés au Centre de calcul de l'Université : la pose des questionnaires et la saisie des réponses étaient simultanées.

3 - Elles présentent un certain nombre de constantes dans les résultats dégagés.

- sur la composition du public qui fréquente les bibliothèques, l'analyse des résultats montre une écrasante prépondérance des étudiants de 1er cycle (jusqu'aux diplômes à Bac + 2). Cependant si l'on rapproche ces chiffres de fréquentation de la composition de la population étudiante correspondante, on constate en général que le taux de pénétration progresse avec la poursuite d'étude : autrement dit les étudiants de 3ème cycle, moins nombreux en valeur absolue, fréquentent proportionnellement plus la bibliothèque que les étudiants débutants.

Le public des BU ne reflète pas non plus exactement le public universitaire dans sa répartition par discipline : les étudiants de lettres, sciences humaines, droit et sciences sociales utilisent davantage les ressources documentaires que ceux de sciences exactes, technologie et disciplines de santé. Par ailleurs, on a pu remarquer que dans certaines filières d'enseignement plus récentes, axées sur la pré-professionnalisation ou l'interdisciplinarité, l'utilisation de la bibliothèque par les étudiants était moins importante que

dans les filières générales

- sur les modes de fréquentation , l'utilisation de la bibliothèque universitaire par les étudiants apparaît comme un phénomène régulier et massif. A Paris en 1988, un étudiant interrogé sur deux venait entre trois et quatre jours par semaine à la bibliothèque, et ce résultat se retrouve dans plusieurs autres enquêtes. Le temps moyen passé à la bibliothèque se situe, dans la même enquête, entre une et deux heures pour 40 % des étudiants, et entre deux et quatre heures pour près de 30 %.

Cependant, d'autres éléments des enquêtes permettent de penser que cette fréquentation importante correspond, au moins en partie, à une utilisation des locaux des bibliothèques comme simples lieux de travail. En effet les questions sur la connaissance et l'utilisation des différents services de la bibliothèque confirment une sous-utilisation très importante d'un grand nombre de services, à l'exception, certes essentie, de la communication et du prêt des livres. Les réponses aux questions sur la satisfaction des usagers par rapport aux différents services proposés par la bibliothèque donnent la mesure d'un paradoxe important : l'expression est celle d'une satisfaction globale (sauf sur la taille et l'état des locaux), mais qui évolue rapidement vers des taux de non-réponse très importants quand les questions portent sur des services de plus en plus spécialisés (prêt entre bibliothèques, interrogation de banques de données, service des thèses). En d'autres termes, l'appréciation portée par les étudiants correspond à une image très traditionnelle du rôle de la bibliothèque universitaire.

Une autre preuve de ce comportement est apportée par l'analyse d'un des résultats de l'enquête conjointe sur les dix bibliothèques parisiennes en 1988, évoquée plus haut. Cette enquête s'était attachée à repérer les phénomènes de flux croisés d'étudiants dans plusieurs établissements de la même zone géographique. On constate ainsi que la fréquentation de plusieurs bibliothèques - universitaires, publiques ou Bibliothèque nationale - par un même étudiant est une pratique d'une fois et demie à deux fois plus fréquente pour les étudiants des universités du centre de Paris que pour ceux qui sont inscrits dans une université de la périphérie ; ceci tendrait à démontrer que les avantages de proximité viennent au premier rang dans la motivation des étudiants, avant même l'importance et l'intérêt des collections disponibles.

Une étude de cas : la bibliothèque interuniversitaire de Toulouse (BIUT)

La particularité de la BIUT, à l'image de celles d'autres grandes villes françaises, est d'être commune dans ses statuts et dans son fonctionnement, à l'ensemble des quatre universités situées dans la ville. La bibliothèque comprend cinq bâtiments dispersés dans la ville, car situés chacun sur le campus de l'université qu'il dessert directement. La population étudiante dépasse 65 000 étudiants, répartis entre toutes les disciplines universitaires.

L'enquête auprès du public a été menée au cours de l'année universitaire 1991-1992. Tout en s'appuyant très largement sur les diverses expériences qui l'ont précédée, elle a tenté d'apporter des innovations sur un certain nombre de points :

- dans la réflexion même qui, au sein de l'établissement, a présidé à la démarche d'enquête. La bibliothèque se situe en effet dans une phase de rénovation fondamentale et de développement de projets importants : il importait donc de se doter d'une série d'indicateurs de nature à valider la pertinence des projets de développement et à permettre un suivi régulier de l'impact de ces projets auprès du public, au travers d'enquêtes menées régulièrement. De façon essentielle, il s'agit "d'évaluer pour évoluer"

- dans la formulation du questionnaire

Plusieurs des enquêtes antérieures, on l'a vu, ont montré qu'il existait des modes différents d'utilisation de la bibliothèque par les étudiants, depuis un lieu où travailler sur ses notes et documents personnels jusqu'à un très large recours aux ressources et aux services documentaires. Il faut rajouter à ces catégories celle du "non-public", c'est-à-dire les étudiants qui pour des raisons diverses, mais intéressantes à connaître, ne fréquentent pas la bibliothèque. Cette réflexion a conduit à bâtir un questionnaire qui segmente les comportements possibles, en établissant une progression depuis le non-lecteur jusqu'à l'utilisateur le plus actif. Le questionnaire se présente donc en trois parties :

La première, commune à tous les étudiants, doit permettre d'apprécier la notoriété de la bibliothèque comme lieu et comme fournisseur de services divers, de mesurer les taux de fréquentation ou de non fréquentation et, dans ce dernier cas d'en analyser les raisons : problèmes d'horaires d'ouverture, utilisation préférentielle d'autres bibliothèques, motifs éventuels d'insatisfaction.

La deuxième partie s'adresse aux étudiants qui viennent à la bibliothèque, mais qui peuvent l'utiliser seulement comme lieu de travail, sans recourir aux ressources

documentaires. Les questions portent sur l'organisation des locaux, sur l'aisance de l'étudiant à se repérer et à s'orienter entre les différents services, sur l'existence d'une initiation ou d'un conseil préalable à l'utilisation de la bibliothèque, sur les pratiques de demande d'aide et d'assistance auprès du personnel.

La troisième partie est réservée aux étudiants qui utilisent les documents et les services. Elle a pour objectif de fournir des données très détaillées concernant l'usage des documents (typologie, origine et motif de la recherche, satisfaction quant à la présence des documents désirés) et l'accès à ces documents (types de fichiers utilisés, difficultés éventuelles dans leur utilisation, recours aux collections en libre accès ou demande de communication d'ouvrages en magasins clos, emprunt de livres à domicile).

- dans la qualité et la formation des enquêteurs. Certaines difficultés des études précédentes étaient nées de la méconnaissance du fonctionnement et même du vocabulaire des bibliothèques par les enquêteurs et les chargés d'étude. Pour pallier cette difficulté, un dispositif a été mis en place, comprenant: une réunion préalable d'information et de formation rapide des enquêteurs ; la rédaction d'un guide à leur intention, qui précisait le contexte de l'enquête, expliquait un certain nombre de questions et donnait toutes les précisions nécessaires pour éviter de mauvaises interprétations des réponses ; enfin pendant le déroulement de l'enquête une réunon pour faire le bilan des difficultés rencontrées et y apporter des solutions.

Ce dispositif avait été prévu avant de recruter et de connaître les enquêteurs. Un hasard heureux a fait que nous avons pu engager pour cela des étudiants d'un Institut Universitaire de formation aux métiers de la documentation (IUP, option médiathèque) qui étaient à la fois compétents dans le domaine, disponibles, et très motivés par cette étude. Ce type de recrutement a eu d'ailleurs des conséquences inattendues : la pose du questionnaire aux étudiants s'est transformée dans certains cas en une véritable action d'explication et de promotion du rôle et des projets de la BIU ; un "effet-marketing" non prévu au départ, mais bien réel ! Cependant, si cette opportunité ne se renouvelle pas dans l'avenir, le dispositif d'aide aux enquêteurs conserve toute son efficacité.

- dans le dépouillement et l'exploitation des résultats. Même si presque toutes les enquêtes font l'objet d'un dépouillement informatisé, le document final remis aux responsables de l'établissement se présente comme un rapport écrit, comportant un nombre forcemment limité de résultats, tableaux ou graphiques. Si cette présentation est la meilleure pour une diffusion vers l'université ou d'autres partenaires, les bibliothécaires peuvent avoir besoin à tout moment d'éléments chiffrés, de calcul de pourcentages ou de

corrélations qui n'auraient pas été prévus au moment de l'exploitation des résultats. Pour répondre à cette demande, le laboratoire universitaire avec lequel nous avons travaillé a adapté un logiciel, de type SGBD (système de gestion de base de données) qui nous permet de réaliser nous-même toutes les recherches possibles à partir des données chiffrées de l'enquête, sur un micro-ordinateur. Les données peuvent également être importées sur un tableur (Excel), pour réaliser tous les graphiques nécessaires.

L'utilisation de ce logiciel ne dispense pas toutefois d'une reflexion sur la nature des résultats que l'on souhaite obtenir à partir des données de l'enquête. A la BIUT, l'étude des corrélations possibles a été affinée pour essayer de connaitre avec précision les pratiques documentaires et les démarches des étudiants dans la recherche d'information. Par exemple, corréler l'utilisation des fichiers et la recherche des livres en libre-accès; se demander si l'activité d'emprunteur est davantage favorisée par la recherche de références dans les fichiers ou par l'accès direct aux collections de livres sur les rayons; mettre en relation le fait pour un étudiant d'avoir suivi une initiation ou une formation à la recherche documentaire et sa plus ou moins grande aisance à utiliser toutes les ressources de la bibliothèque, etc. L'intêret du logiciel utilisé est de permettre d'affiner toutes ces corrélations par sous-ensembles de la population enquêtée, soit par niveau d'étude, soit par discipline ou même par filière. L'autonomie conférée à la bibliothèque dans les possibilités d'exploitation des données de l'enquête ouvre un champ de recherches quasi illimité.

Nous avons essayé de rendre compte des expériences d'évaluation de la composition, des pratiques, des attentes et de la satisfaction du public menées dans plusieurs bibliothèques universitaires françaises. Si ces expériences connaissent des limites -peu de bibliothèques, par exemple, parviennent à renouveler ces enquêtes avec régularité-, elles sont aussi relayées par l'action d'autres organismes tels que le Comité National d'Evaluation des Universités : cette institution s'attache, à chacune de ses interventions, à évaluer la bibliothèque parmi les autres composantes de l'université, en interrogeant un nombre aussi large que possible de ses utilisateurs.

Enfin, même si les préoccupations des bibliothécaires sont à bien des égards spécifiques, leurs pratiques d'évaluation ne doivent pas rester isolées dans l'université mais au contraire être intégrées dans une volonté et un projet plus larges. C'est dans ce but que l'Association française des Directeurs de BU a travaillé récemment à la définition d'un nombre limité d'indicateurs d'activité qui seront inclus dans le Tableau de bord global des universités, en cours d'élaboration.

notes:

(1) JOLLY (Claude), RENOULT (Daniel).- Le Public des B.U. de lettres et sciences humaines dans la région parisienne : une première approche. In : Le Débat, 1988.

(2) RAMBHUJUN, Nardeosingh.- Le Marketing des bibliothèques universitaires; une étude de cas: les usagers de la bibliothèque universitaire de Bordeaux, section droit et sciences économiques, in Bulletin des Bibliothèques de France, t. 29, n°1, pp 7-15

(3) EYRIES, Brigitte; JUAN, Sophie et MEINARDI, Michel.- Les Activités des étudiants à la section sciences de la bibliothèque de l'université de Nice, in Bulletin d'information de l'ABF, n° 142, pp 34-43

(4) minitel : terminal informatique, diffusé en France à des centaines de milliers d'exemplaires, qui permet de se connecter par réseau téléphonique Transpac à de très nombreux centres serveurs

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Measuring User Satisfaction: Statistics and User Studies

by

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User studies have become more and more frequent in French university libraries since the middle of the 1980s. The starting point for this development was dissatisfaction with the limited interest of the purely statistical data gathered annually for the ESGBU (general statistical survey of university libraries, set up at the request of the French Ministry of Education), which offers only a partial measure of activity and gives no indicator for appraisal of user satisfaction. There was also a desire to verify scattered impressions and observations as to the behavior and attitudes of users by means of a more methodical analysis.

From a wider point of view, other reasons dictate this increased concern for evaluation. The significant increase in the means of university libraries, beginning in 1988 (a tripling of government subsidies has led them from a defensive type of behavior to a more proactive attitude, oriented toward development of services and improvement of quality. Finally, an important change in the make-up of the French university must be mentioned. A continuing increase in the number of students goes along with a change in the factors bringing them to the university as a result of a demand on the part of social categories which, until now, have not had access to the university. This movement, which seems far reaching, linked to the need for a higher level of qualification expressed by business and industry, can also be measured by the behavior of more heterogeneous masses of students in regard to culture and information, by their reading habits, their use of and approach to documentation, their way of "finding out." In order to offer appropriate, or even, in some cases, specific training programs in the use of libraries, we must begin with a good knowledge of the habits and expectations of these users.

User studies

A poll taken in 1990 at 70 French university or interuniversity libraries showed that one third of them had carried out global surveys to measure the composition and satisfaction of their users.

Although proceedings from isolated initiatives on the part of institutions to analyze their own user population (with the exception of a single case which we will come to later), these surveys present a certain number of common, or similar characteristics:

1. They are global studies, which is to say they attempt to take into account all the categories of people using the library on the one hand, and, on the other hand, the attitude of this group of people toward the sum total of the activities and services offered. This desire to avoid segmenting the study corresponds in part to a concern for efficiency and for the effectiveness of the survey procedure, and also to a desire to get an exact picture of the entire user group. However, it proved to have limitations in a certain number of cases. Thus, university teachers, who although they represent a particularly interesting group for study, have been poorly apprehended through questionnaires designed primarily for students. The questionnaire method may, in fact, have been ill adapted to a study of the behavior of teachers; it might be better as regards this group to use the more flexible and individualized personal interview. In addition, as concerns library services, certain specialized ones such as interlending or searching of automated databases, are known to and used by, only a small part of student populations. In spite of the use of the techniques of composite sorting in gathering the results, the number of responses concerning these services was often too small for the analysis to be really fruitful.

In 1988, one survey went even further with this aim of global measurement of the composition and behavior of the user group. The framework of the study this time was the entire university population in the humanities departments of all the Parisian universities and used a single questionnaire at the same time in six regional libraries.[1] In addition to the interest of the study for each of the institutions involved in the project, this survey made it possible to bring out multiple use habits (the frequenting of several libraries) and to measure the alternating movement of students from one institution to another.

2. They were worked out and conducted in accordance with a relatively homogeneous methodology, no doubt partly because the same problems led to similar solutions, and also partly because information on surveys already carried out and on the circulation of several questionnaires was exchanged, thanks to professional associations or to more informal means. The 1988 study on the ten Parisian libraries also contributed greatly to [this].

2.1. The work was often done in collaboration with a university teacher or a team of researchers. Sometimes the library's survey project finds an echo in the initiative of a university researcher who does personal research work on the same subject.[2] It then generally determines the approach from beginning to end. In other cases, knowledge complementary to that of librarians is drawn upon, either to elaborate the questionnaire itself or to perfect the survey method sampling, gathering, exploitation, etc. The university personnel thus associated with the different survey projects represent different disciplines, particularly sociology, econometry, and marketing.

A variation on association with a university team is recourse to a junior firm. These are student associations, usually on the upper undergraduate or graduate level, whose aim is the carrying out of highly diversified studies for firms or groups, in exchange for remuneration at a considerably lower rate than that charged by service companies. The interest of this approach is that the junior firm takes charge of the entire survey process, from the preliminary study and the planning of the questionnaire to the gathering and analysis of the results, as well as the asking of the questions. The relative disadvantage, other than the higher cost accruing than when the library itself carries out the survey, at least partially, is the somewhat vague and sometimes superficial knowledge

that the persons responsible for the study and the survey takers have of the world of librarianship.

2.2. The questionnaires are usually presented orally to the students by survey takers who are not members of the library staff. Heavier and more difficult to organize (survey takers must be found, trained, and directed), this method offers numerous advantages. It guarantees that the desired number of questionnaires will be filled out, it makes it possible to make the questionnaire explicit and to avoid incorrect answers to misinterpreted questions. Other solutions--questionnaires submitted in writing within the library, whether under the control of the personnel or not, or sent by mail--solicit fewer responses and do not offer the possibilities mentioned above. The presentation of the questionnaires by members of library staff has other disadvantages. It poses a problem for other usual activities if the library does not have considerable staff, and, on the other hand, there is a risk of limiting the freedom of response to certain questions on the part of students.

2.3. The question of sampling was treated in two different ways. In many surveys, no previous effort was made to determine sampling: the students were questioned at random, or in a haphazard way (one student out of ten leaving the library, for example). It is only when the results are exploited that the make-up of the user group apparent from the questionnaire is compared with the other statistical data arrived elsewhere by the university and by the library. This method makes it possible, for example, to calculate the total number of students frequenting the library, when the latter does not monitor arrivals, by asking a question on registration for the lending system, since the total registration is otherwise known.

In certain cases, however, the study of specific categories of users must be made even if they are of slight numerical importance. In these cases, a preliminary sampling is necessary, with a precise determination of the categories to be questioned. The panel method can also be considered when the library has exact data on the make-up of the total user population at its disposal. This is the case for the Bibliothèque Sainte-Geneviève in Paris, which, having set up a system of access monitoring paired with the software registration of its readers, has precise knowledge of the latter. The sampling taken for the survey can then be a perfect reflection of the categories of the overall user population.

2.4. The experience of manual tabulation of a survey is sufficiently trying for an automated approach to be adopted in almost all cases. This practice has its counterpart in a constraint--the necessity of working out questionnaires including a maximum of "closed questions" (yes or no answers to responses suggested by the questioner) since automatic entry of answers to open questions is almost impossible.

An original experiment in this regard should be mentioned, that of the Nice University library in 1987,[3] where the survey was carried out directly by means of Minitels[4] connected to the university's computer center: the asking of the questions and the input of the answers were simultaneous.

3. They present a certain number of common factors in the results arrived at:

• as to the make-up of the user population frequenting the libraries, analysis of the results shows an overwhelming majority of lower-level students (first and second year). However, if these figures are compared to the corresponding student population, it will be found that, in general, the rate of penetration progresses as the study progresses.

In other words, upper level students, less numerous in the absolute, frequent the library proportionately more often than beginning students.

Users of university libraries do not precisely reflect the university population in its break-down according to field of study either. Students in arts and science, law, social science use the library's documentary resources more often that those in the exact sciences, technology, and medicine. At the same time, it has been noticed that in certain of the more recent fields of study, aimed at pre-professional or cross-disciplinary training, the use of the library by students was less significant than in the general branches:

- as to type of use of the university by students, it appears to be a regular and massive phenomenon. In Paris, in 1988, one out of every two students questioned came to the library between three and four days a week, and this result is found in several other surveys. The average length of time spent at the library, according to the same study, varies between one and two hours for 40% of the students, and from two to four hours for nearly 30%.

However, other elements of surveys lead us to think that the significant rate of use corresponds at least in part to the use of the reading rooms in the library simply as study areas. The questions on knowledge and use of the different library services in fact confirm a very limited use of a large number of services, with the obviously essential exception of the consulting and borrowing of books. The answers to questions on user satisfaction in relation to the different services offered by the library bring out a significant paradox. What is expressed is satisfaction in general (except as concerns the size and condition of reading rooms), but this evolves rapidly toward high rates of unanswered questions when the latter have to do with more and more specialized services (interlending, searching of databases, thesis services). In other words, the judgement expressed by the students corresponds to a highly traditional image of the university library.

Another proof of this behavior is furnished by the study of one of the results of the joint survey of the ten Parisian libraries in 1988 mentioned above. This survey had concerned itself with back-and-forth movement of students from one university to another in the same geographical zone. It was thus found that the frequenting of several libraries--university and public libraries and the National Library--on the part of the same students is a practice one and a half times more frequent among students at universities in the center of Paris than for those registered at a university in the periphery. This would tend to show that the advantages of proximity come first as a factor in student motivation, even before the importance and interest of the collections available.

A Case Study: The Interuniversity Library in Toulouse (BIUT)

The special characteristic of the BIUT, like that of libraries in other large French cities, is a sharing of statutes and operating procedures with all four universities located in the city. The library comprises five buildings at various places in the city since each is located on the campus it serves directly. The student population, all university disciplines taken together, is in excess of 65,000.

The user study was conducted during the 1991-92 academic year. While leaning heavily on the various preceding experiences, it attempted to innovate in relation to certain points:

• in the thought within the institutions that guided the survey procedure. The library, in fact, is now in a phase of fundamental renovation and development of important projects. It was therefore important to find a series of indicators of a type likely to validate the relevance of development projects and to allow a regular follow-up of the impact of these projects on users through surveys at regular intervals. In an essential way, the question is that of "evaluation for evolution."

• in the formulation of the questionnaire. Several earlier surveys, as we have seen, showed that students used the library in different ways, either as a place to study personal notes and other material or as a possibility to have considered recourse to the resources and documentary services available, or in other ways between these extremes. To these categories must be added that of the "non-users," the students who, for various reasons which it might be interesting to explore, do not go to the library. This reflection led to the development of a questionnaire segmenting possible [levels of use] from the non-reader to the most active user. The questionnaire is thus in three parts:

The first, common to all students, should allow an appreciation of the library's reputation as a place and as a supplier of various services, to measure the rates of use or non-use and, in the latter case, to analyze the reasons for this: problems having to do with opening hours, preferred use of other libraries, possible motives for dissatisfaction.

The second part is addressed to students who come to the library, but who may use it only as a place to study, without having recourse to its study resources. The questions deal with the organization of the facilities, the student's ease in getting his bearings and finding his way around among the different services, the existence of an initiation program on library use or of preliminary advice on its use, and requests to personnel for assistance.

The third part is limited to students using library materials and services. Its aim is to furnish detailed data concerning the use of materials (type, origin, and motive of research, satisfaction in regard to the availability of the desired documents) and access to these materials (kinds of catalogs used, possible difficulties in their use, free access to the collection or requests to consult books located in closed stacks, . . . books).

• on the quality and training of the survey takers. Certain difficulties in the preceding studies came from a lack of knowledge of the functioning of libraries and even of library vocabulary on the part of the survey takers and directors. To mitigate this difficulty, an arrangement was set up to provide a preliminary orientation and training meeting for survey takers, the drafting of a guide for their benefit to clarify the context of the survey, to explain a certain number of questions and to give all the details necessary to avoid incorrect interpretations of the answers, and, finally, during the course of the survey, a meeting to draw conclusions in regard to the difficulties encountered and to find solutions.

This arrangement had been made before the survey takers were signed up. A fortunate coincidence made it possible for us to take on students for a university institute for the training of documentalists (IVP students majoring in media techniques) who were competent in this area, available, and highly motivated. This type of recruiting had unexpected results. The presentation of the questionnaire to the students, in certain cases, became an explanation of the role of the BIUT--a "marketing effect," not planned at the

outset, but quite real! However, if this does not reoccur in the future, the support mechanism for the survey takers remains efficient.

• in the gathering and exploitation of the results. Even if all the surveys are the object of automated compiling, the final document submitted to the authorities of the institution is presented in the form of a written report, comprising a necessarily limited number of results, tables, or graphs. Although this presentation may be the best for dissemination at the university or among other interested groups, the libraries may at some time need precise figures or percentages or correlations that may not be foreseen at the time the results are exploited. In order to meet this demand, the university research center we worked with adapted software of the database management system type which is allowing us to carry out all possible types of research ourselves with survey data as a starting pointing and using a PC. The data can also be imported to a worksheet (Excel) to produce the necessary graphs.

The use of this software does not however obviate the necessity of some thought on the nature of the results expected from the survey data. At the BIUT, the study of possible correlations was narrowed down in order to try to find out precisely what the search practices and the approaches of the students are in seeking information. For example, correlating the use of catalogs and the search for books in open stacks; discovering whether the user's work is aided more by the search for references in catalogs or by direct access to the collections of books on the shelves; establishing a relationship between a student's having been trained in search techniques and the greater or lesser ease in using the library's resources, etc. The advantage of the software used lies in allowing greater precision in all these correlations according to the sub-groups of the population examined, either according to level of study or to field of study, or even field of specialization. The autonomy given the library in the possibilities of exploring the survey data opens an almost unlimited field of research.

We have tried to give an account of experiments in evaluating the make-up, the practices, the expectations, and the satisfaction of users conducted in several French university libraries. If these experiments have limits--few libraries, for example, succeed in repeating these surveys regularly--they are relayed by the action of other groups such as the National Committee for the Evaluation of Universities. This institution is concerned, in all its actions, with evaluating the library as one of a number of components of a university, by questioning as large a number of users as possible.

Finally, even if the preoccupations of librarians are in many ways specific, their evaluation practices should not remain isolated within the university, but on the contrary, be integrated into a larger project and purpose. This is the aim of the French Association of University Library Directors in its recent work on the definition of a limited number of activity indicators to be included in the overall picture of universities.

References

1. Jolly, Claude and Renoult, Daniel. Le Public des B. U. de lettres et sciences humaines dans la région parisienne: une première approche. In: *Le Débat*, 1988 (The users of the University Library of Arts and Science in the Parisian Region: A First Approach).

2. Rambhujun, Nardeosingh. Le Marketing des bibliothèques universitaires: une étude de cas: les usagers de la bibliothèque universitaire de Bordeaux, section droit et

sciences économiques. In *Bulletin des Bibliothèques de France*, t.29, no. 1, pp. 7-15. (Marketing of University Libraries: A Case Study: The Users of the University Library in Bordeaux, Law and Economics Department).

3. Eyries, Brigitte; Juan, Sophie; et Meinard, Michel. Les Activités des étudiants à la section sciences de la bibliothèque de l'Université de Nice. In: *Bulletin d'information de l'ABF*, no. 142, pp. 34-43. (Students' Activities in Science Section of the Nice University Library).

4. Minitel: a data processing terminal, distributed in France in hundreds of thousands of units, which makes it possible to be linked to numerous hosts by means of the telephone network Transpac.